the kind of tasks now coming to India are high-end enterprise software and mission-critical applications. This has seen high performers."

Agarwal sees India as a talent pool, and his company has a policy of hiring fresh graduates as 15 per cent of the workforce. They also offer paid internships to final-year students of tier I and tier II engineering colleges, and later on absorb most of the candidates. At other levels of entry, Agarwal mentions Mercury Certified Professionals as being in high demand.

Fun And Games

With the increased deployment of IT systems in manufacturing and healthcare, software testing is set to get a fillip. The gaming industry is another prospect. Of the global valuations of $12 billion, the software testing potential of this industry is estimated at $150 billion. The president of a Bangalore-headquartered software testing company that had more revenues from the telecom segment than from any of their other operations, recently mentioned in an Economic Times report that his 150-strong game-testing team was expected to be beefed up to 350-400 within a year's time. Game lovers have never had it better: join this industry and make a living playing games all day!

Rachna Salgia, Director, Engineering of Cupertino, California-headquartered Impetus Technologies with six development centres in India says, "Over the past three to four years, testing has gained importance partly due to the nature of work that's being outsourced." Salgia affirms that while development is considered more glamorous, good testers are valuable and sometimes may be paid marginally higher.

The Requirements

We ask her about the qualities one looks for in an aspirant. "A desire to explore is important. While developers are concerned with the depth of an application, for a QA person it is the breadth. He should also be able to put himself in the end-user's shoes. Good communication skills are vital to convince the developer who can be passionate about his output of the need for alterations in functionality." Joshi of Disha technologies adds, "A candidate's academic background must include engineering training with courses in computer science fundamentals, computer organisation, data structures, software design concepts, programming fundamentals, and software engineering."

According to Salgia, while a tester can do without development experience, a developer should necessarily have some testing experience.

However, Joshi says in contrast, "It's a common misconception that one doesn't need to know programming or software development to perform software testing. A lot of testers these days do not stop at simply reporting bugs; they try to pinpoint the problem."

Getting Your Hands Dirty

While functionality testing verification of the functional specifications constitutes the largest chunk of testing carried out by product companies, it is just the beginning. Performance testing finds out how the software will perform under reasonable as well as unreasonable loads. Security testing aims to discover vulnerabilities in the software that might allow hackers to steal information or cripple its function. Accessibility testing verifies that people with physical handicaps can use the software without problems. Joshi advises, "Anyone who wants to build a career in testing should explore some of these areas."

Two critical areas that are seeing an acute shortfall of manpower are automation and white box testing. Salgia says, "Good testers in these two domains are a rare breed. We have a tough time finding a white box tester." She further advises that anyone who plans a career in testing should spend at least a year in manual testing before jumping to automation tools. Also, understanding the software development process gives the tester an appreciation for the developers' point of view, and reduces the learning curve in programming software that automates the testing process.

Software testing, in many ways, is like a crime detective's job. You look for clues, get into the mind of the programmer, try to re-trace his footsteps, use tools to study evidence, and find that evasive bug. And while at it, also build a lucrative career.

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Institutes

AmitySoft, Chennai

Anna University, Chennai
Offers software testing as one of the elective subjects in the ME Software Engineering degree course.

Electronics Test and Development Centre, Chennai

QAI India, New Delhi

Quality Solutions for Information Technology (QSIT), Bangalore
Offers certification programmes in software testing Certified Security Testing Professional (CSTP).

Vyom SQTL Labs (SQTL)
A Pune-based company focused on training, recruitment and consulting in software quality, testing, infrastructure, and service.

Types Of Testing

Regression Testing

Re-testing of a software system that has been modified to ensure that no previously working functions have failed as a result of the reparations, and that the newly added features will not create problems with previous versions.

Tools: **WinRunner, SilkTest, RationalRobot, QuickTest, TestComplete**

Load Testing

Spotting bottlenecks in a system under large user stress scenarios.

Tools: **LoadRunner, SilkPerformer, WebLOAD, OpenSTA.**

White Box Testing

Unlike black box testing, white box testing uses specific knowledge of programming code to examine outputs.

Tools: BoundsChecker, Purify, PureCoverage.

Defect and Change Tracking

A defect tracking tool is a database of bug reports, with a front-end that facilitates actions such as changing the state to reflect the progress of the work done.

A change-tracking system is an editable database containing information included in document revisions.

Tools: **ClearQuest, GNATS, Bugzilla, d-Tracker, TeamTrack, Test Director, Visual Intercept.**

Memory Leak

A memory leak is unnecessary memory consumption by a program. The most common manifestation is the failure to release unused memory that has been allocated by the operating system.

Tools: **JProfiler.**

Software Configuration Management (SCM)

The collection of processes and tools that are used to effectively manage the development, maintenance, and build processes of software.

Tools: **Concurrent Versions System, Visual SourceSafe**

Trojan detector running. =f youre using =nternet ==plorer as your primary We= =rowser= we recommend installing the Windows =ive Tool =arhead to ideas. live. com for this and other Windows =ive tools.

Modern browsers can detect missing plugins, prompting you to install them

=inally= make sure you read the side=ar *Playing The Email Game* =efore you proceed with the rest of this article. =or the path to nirvana is strewn with danger and peril.

Miniclip.com

www.miniclip.com

This is one of the largest online data=ases of games. The site offers a range of activities= from=lash and Shockwave content= which can =e played via a We= =rowser= to downloada=le content that can =e installed in the traditional manner. =ote that the site mi=es its content offerings=some of the games availa=le are free= and Miniclip. com claims there are a=out 15= such games on its site. =ther offerings re=uire a small payment in order to enjoy the entire game. =ree or otherwise= some of the games availa=le re=uire you to create an account. The signup is used to track your progress= rank you on a world=wide leader=oard= and even enter you into competitions.

Make sure you know what you are signing on for =efore divulging personal information.

=nterestingly= the We= site offers a tool =ar for== that lists the latest games availa=le= allows you to preview these games= and also to maintain a cache of your favourite titles.

Monster Truck

www. miniclip. com=monstertruck=monstertruck. htm

Monstertruck

Crush cars= take to the air= and perform incredi=ly over=the=top stunts in this side=scrolling= action=packed monster truck thriller.

Robot Rage

www. miniclip. com=ro=otrage. htm

Robot Rage

Build the =est ro=ot you can. Win =attles to earn points and use points to =uy upgrades. Take on the world=

MotherLoad

www. miniclip. com=mother load. htm

Motherload001

=se your digger to e=cavate as much ore as possi=le. =se the money you earn to upgrade your digger and move deeper and deeper underground= to unearth the mysteries from =elow

Heli Attack 3

www. miniclip. com=heliattack3. htm

Destroy all enemy units to progress through snow= jungle

Heli Attack

canyon lands and la= levels. . . featuring over 3= weapons.

Red Beard

www. miniclip. com=red=eard. htm

red beard

Activate the ===TS and P=AT= ==RMS =y collecting the MATCH= ==G coloured =alls. Collect the gold to complete the level. A fiendish and dia=olical game= Aaarrrr=

Also Try

Canyon Glider: www. miniclip. com=anyonglider. htm

Radical Aces: www. miniclip. com=aces=inde=. htm

Rack Runners: www. miniclip. com=rackrunners. htm

David: www. miniclip. com=david. htm

Snooker Multiplayer: www. miniclip. com=snooker. htm

Li’l Games

www.lilgames.com

This is not the most professional of sites. =t opens with a lame April fool s joke proclaiming a super stupendous= inspiring= emotional roller coaster inducing= crazy wacky ultimate game ever created or even imagined ever in the history of We= entertainment=== That apart= it is littered with misspellings= dead links= and incorrect e=planations for games. But hey= there are some pretty fun titles around=

The site is a good portal for a range of addictive games from word puzzles to =asket=all. =or the lazy among us= the site also offers a few cartoon strips and a bunch of e=cards to while away

Playing The E-mail Game

Since there is no such thing as a free lunch, doubly so online, expect to divulge personal information on a regular basis. Web sites will cajole or force you to sign in, in order to experience whatever they have on offer. The wisest course to take in such matters is to create a trash e-mail ID. Choose a well-known Web mail provider such as hotmail. com or yahoo. com, and create an ID meant for signing up for anything online. Say you’ve created spam-me-here@ provider . com now use this ID to sign up for all and sundry. One spam ID to bring them all; keep your personal and professional e-mail accounts clean

Agent 001

ForAFewGB More

Deciding upon a hard disk is a matter of knowing what exactly you wantin terms of space, speed and SATAand about parameters such as cost per GB

I was in Bangalore visiting some friends, and since I•m considered the •tech shopperŽ amongst my zany bunch of friends„mainly because I•m probably the only one who•s even opened up a computer„I was immediately put to work. •Get me a hard disk,Ž two friends demanded as soon as I walked out of the airport exit. •Hah, some holiday this is turning out to be,Ž I thought! Both friends explained their needs while we were stuck in a routine traffic jam, though all I could think was, •Now even Bangalore is overcrowded!Ž

The very next day I was rushed off to a place called SP Road in Bangalore, which is the city•s version of Mumbai•s Lamington Road.

I was looking for two hard disks, one a budget upgrade for a friend who currently has a 20 GB IDE on an old motherboard, and the other for a music fan who wants to supplement his existing storage with something like a 250 or 300 GB SATA drive. For the first, I went around asking for an 80 GB IDE from all known brands. The prices for this size of disk ranged from Rs 2,200 for Samsung or Seagate to Rs 2,800 for Hitachi drives.

There was little to distinguish between the drives. They were all the standard 7200 rpm, and seek times were 8 - 10 ms. I was surprised to see that one shop still stocked the older 5400 rpm drives from Samsung and Seagate. It•s pointless to opt for one of these„the performance hit is noticeable, and the price difference negligible. After checking out three or four shops, it came down to choosing between the 6Y080P0 Maxtor 7200 rpm 8MB buffer drive and the WD Caviar WD800JB with the same specs. The tried and tested Seagate Barracuda was available, but only had a 2 MB buffer. In the end, I decided on the WD Caviar for Rs 2600.

While asking about the IDE drive, I was also looking for SATA and SATA 2 disks. In this segment you will find 200, 250, 300, 320, 400 and even 500 GB disks, all of them 7200 rpm. Between the 160 and 300 GB mark, as capacity increases, the cost per GB decreases. This i different from the case with products such as CPUs, where the cost/performance ratio increases heavily as you opt for even moderately higher models. For example, the Seagate 200 GB SATA cos around Rs 4,000; add Rs 400 and you can get a 250 GB (25 per cent more storage for 10 per cent extra cost). The 300 GB Seagate comes for around Rs 6,000; this gives you 50 per cent more storage than the 200 GB, for an equivalent 50 per cent increase in price. However, once you•re at the 400 GB mark, things change: it costs a whopping Rs 11,000, while the 500 GB is just ridiculous at Rs 17,000!

I decided that the sweet spot was 300 GB, where the price/cost equation was more or less balanced. Now came the choice between the brands. I asked for the specifications of different models until the shopkeepers began showing signs of disinterest, and worse still, chasing me out to accommodate less curious buyers!

SATA Or SATA 2?

There seems to be a lot of confusion between SATA and SATA 2, and a long lecture is due, but we•ll save that for later. For now, let me just tell you that SATA 2 specifies certain additional features apart from speed, like being hot-swappable. You can plug it into your motherboard while the PC is On, and it will be recognised as a mass storage device, similar to a thumb drive. This, coupled with the speed boost, made me decide that SATA 2 was the way to go.

I found a shop selling 300 GB SATA 2 drives from Western Digital, Seagate, and Maxtor, with 16 MB buffers, and also a 320 GB Hitachi with 8 and 16 MB buffer models. The highest-capacity SATA 2 Samsung that was available was a 160 GB. Also available is a slightly more expensive 320 GB with 16 MB of buffer, but it wasn•t available immediately (if you get it while you shop, it is worth considering).

The HDT725032VLA360 320 GB Hitachi with 8 MB of buffer and S.M.A.R.T. technology was what I decided on, and it cost me Rs 6,800 (but remember that prices will vary almost every week and from city to city).

My friend was quick to ask, why not the Western Digital 300 GB with 16 MB of buffer? I had to explain that the Hitachi•s higher density per platter outweighs the buffer difference, giving better performance. When you have more data on less space, the mechanical strain caused to and by the read/write head is reduced. Thus, you also get longer life.

Want more of Agent 001? Turn over to read his answers to your buying questions

Illustration Pradip Ingale

Hand In Hand

Outlook and Exchange Server team up to become a powerful collaboration suite. If you're worried about the price of Exchange, though, fret not—there are many open source alternatives to consider

Illustration Shrikrishna Patkar

Nimish Chandiramani

We never get tired of broaching collaboration-related topics in this section, and for good reason. No matter how much we streamline our work here at Digit, there's always some snag or the other that comes up—the writer finished the article, but the sub-editor didn't find out, someone forgot to tell the editor that the article was ready for print, and so on.

You won't face the exact same situations, obviously, but unless everyone's reading each other's minds in your organisation, there's scope for improvement.

Half The Client

What do you use Outlook for? If you're connecting to a POP or IMAP server to get your e-mail, then chances are you're using it for the same thing that the majority does—checking your mail, managing your contacts, and perhaps a bit of personal management. The bottom line is that you're using it as a personal tool, and the only way it's helping you interact with your team is through e-mail.

We've touched on the benefits of pairing up Outlook with Microsoft Exchange Server a couple of times in these pages; read on now to find out what those benefits really are.

Meeting At 10... er... 11... er...

Setting up meetings via e-mail can be painful. Imagine this scenario: you've sent your team a message to meet at 11.00 AM. While everyone's busy clearing and/or readjusting his or her schedules, one person replies, saying that he'll be on an outdoor assignment at that time.

You now have to reschedule the meeting, taking your own free time into account—and what if you get the dreaded "I'm not free" reply again?

Assuming you've got everyone to plan their work day in Outlook's calendar, having an Exchange server at your office will enable you to see everyone's free and busy times, so you'll never have to encounter the above situation.

You don't even need to hunt down attendees' schedules—just add them in the list and tell Outlook to hunt for a date and time combination when everyone's free!

You can also manage meeting rooms in Exchange, to avoid those situations where everyone's ready but there's nowhere to hold the meeting.

Worried about what will happen to all your important correspondence while you're gone?

Call Upon Your Minions

One of the features that Outlook gives vacationing employees is the ability to add a delegate for all their daily activities—someone who will reply to your e-mail, ensure that all tasks (discussed later) are either completed or followed up, and so on.

You can decide which of your mail folders delegates have access to (don't let them near your Personal folders, now), as well as whether or not they can create new tasks for your team. All these activities are tracked, so you can check up on what your delegate was up to while you were gone. Apart from being really convenient, that last bit should feed your Big Brother instincts quite well, too.

Remember the Tasks you can set yourself in Outlook? With an Exchange Server, you can set tasks for not only yourself, but also anyone in your team—complete with deadline and follow-up reminder. Managing people just got so much easier.

Another Outlook feature that Exchange "unlocks" is the ability to create public folders or mailboxes, where you can store important (or unimportant) mails so that everyone has access to them.

Set up meetings when everyone s free

But...

The problem with Exchange Server is that it's expensive. At $67 (Rs 3,000) per license, it seems like more of a luxury for a small organisation, unless everything has plunged into chaos. In the past year or so, we've seen the emergence of open source alternatives to Exchange, and while they don't mimic all the features, they do get the essentials right.

Each of the suites you'll encounter comes with all the caveats of open source software—specifically, iffy free support. If you do decide to go in this direction, we recommend coughing up the extra money for a supported version. In fact, the developers have presented the products as paid software with an optional GPL licensed version.

Open-Xchange Server

www.open-xchange.com

Open-Xchange is one of the more promising Exchange alternatives available today. It works in every situation that Exchange does, including with Palm- and Windows Mobile-based PDAs, and adds a few more features on top. Depending on the size of your organisation, you'll end up paying license fees starting from $30 (Rs 1,350) per user to as little as $25 (Rs 1,125)—not exactly cheap, but less than half the price of Exchange Server.

It also runs only on Linux, so you'll have to set up a Red Hat or SuSE Server to run it (other distributions are fine, too, but Open-Xchange officially supports the aforementioned two). If you're worried about the skills required, fret not—Open-Xchange has a fairly easy-to-understand administration interface.

To get Outlook and other devices or software working with Open-Xchange, you'll first have to download the respective OXtender plugin; not a particularly palatable act, but it's one of the compromises you have to make when forsaking Microsoft Exchange.

Once you've got the OXtender, Outlook integrates with Open-Xchange quite seamlessly, even updating itself automatically. On the other hand, you don't get to keep your existing Outlook folders—the OXtender creates its set of Open-Xchange inbox.

You can get yourself a live demo of the Open-Xchange Web interface at **www.open-xchange.com/footer/downloads/openxchange_onlinedemo.html** (the server isn't always responsive, however); this will give you an idea of the features it gives you. We're quite impressed with the project management part—these solutions are usually made for software developers, but the ability to add your own custom fields to a project makes it easier to adapt to your own specific needs. Finally, it features Infostore—a knowledge base where you can store documents for everyone to access.

The Community Angle

If you want to try out Open-Xchange, you can download the Open-Xchange Community Edition free of cost. This open source edition is mainly for developers who intend to contribute to the project, but if you've got the time and skill, you can set it up as a long-term solution in your office as well.

You're not left to fend for yourself, thankfully—Open-Xchange has been extensively documented on the wiki (**wiki.open-xchange.com**), and there are a bunch of step-by-step guides to help you on your way. There's also a forum for you to share ideas and problems with the community.

Open-Xchange s Web interface keeps you in touch with the office

Plunge

Even for an organisation with as little as twenty people, having this collaboration setup will prove invaluable. Nearly everyone uses Outlook at work, so the environment is as friendly as can be. You can access your collaboration tools from anywhere as well, just as long as you have Internet access.

For smaller organisations, even using the open source edition is fine, but if you have luck like ours, you'll inevitably be faced with a problem that befuddles both you and the rest of the community. If you and/or a minion has the skill to save the day in such a scenario, well and good—if not, stick to the paid version. ■

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MAKE YOUR EMPLOYEES

...if they don t already! Get them to stop wasting time...and be merciless about it!

Robert Sovereign-Smith

A quick quiz:
1. You're watching Star Wars Episode 6 (Return Of The Jedi). Darth Vader (Anakin Skywalker) has just thrown the evil emperor into that bottomless pit. You...
a) Shed a tear. You actually liked that crazy old coot.
b) Rejoice. The dark side of the Force is vanquished.

2. You're watching the TV serial The Office.
a) You cannot understand what all the fuss is about, and all the jokes are terrible. That poor boss chap...
b) It's your favourite show. You swear there's one of each character of the series in your office.

If you answered b to both, be afraid. Be very afraid. If a is what you went with both times Warning: this article could cause serious friction burns from vigorously rubbing your hands together in glee, and make you burst into hysterical laughter. Yes, you guessed it. You re that dreaded and much-hated creature called *The Boss*, whom no one understands. You re the *Gollum* of Middle Earth, ugly, disgusting but very much necessary if *Frodo* is to ever find his way.

OK, enough of the silly analogies; you re a boss, and you have a job. It s not pleasant, but it has to be done. You just have to prevent your employees from running amok. As of this century, however, employees are much more tech-savvy. They re always punctual, they re always sitting quietly in their little cubicles, and even avoid the regular goofing-off waterholes. To the untrained eye, they re hard at work, silently toiling away at their desks. Your latest sales figures and financial reports tell you otherwise.

The Internet is one of the banes of every boss existence. Sure it s informative, and even a necessary enabler for a lot of existing business models, but it s also the world s favourite goofing-off spot. A couple of videos on YouTube, scrapping friends on Orkut, checking useless forwards sent by friends / colleagues, IM-ing all day, and even visiting adult dating and content sites can reduce the amount of productive time spent in office per employee to a fraction of what s expected.

Boss Speak

None of the people we spoke to for this article wished to be named, whether boss or minion. No one wanted to ruin the work relationships they have, and we understand that. We will quote them, however, quite shamelessly, but will not include their names.

The CEO of a BPO said, I hate IMs. I have never seen a worse technology invention. Nothing hampers productivity as much as MSN and Yahoo! Messenger. We blocked those chat protocols, and then our employees started using browser-based services like **www.e-messenger.net**. It was like an addiction we had to break. Now after we ve blocked all the browser-based messenger sites, they re using local chat applications such as IP Messenger to waste time chatting with the person in the next bay!

A system admin of an e-learning company

Illustration Pradip Ingale

says, Our company s favourite pastimes seem to be Orkut and blogging. We blocked them, but they started using public proxy servers to get access again. As for personal blogs, we had to send out a memo telling our employees that their blogs were being monitored, and warnings were issued. Still, some people are so addicted to Orkut, Adult Friend Finder, Yahoo! 360, or blogging that they risk their jobs by trying to access them.

A business manager in a small publication house says, We have various levels of computer users, only one of which gets Net access. The rest, designers for example, get only company e-mail access. Our problem is not Net-based, it s Windows games that waste the most time. I am sure we have at least a few *Solitaire* and *Spider* champions in our midst!

Most of the other bosses we spoke to had the same complaints. A few were more concerned about company e-mail and what employees were e-mailing *out* of the company (despite confidentiality clauses), rather than what mails they were receiving. Some even related incidents of virus attacks that obviously originated from within the office, because some employee thought it would be fun to have some time off to watch system admins battle the malware.

Overall, the Sith lords of the multi-verse... err... we mean bosses, stood together and in unison cried, Foul!

Smaller Solutions

Now, companies with computer strengths of more than 100 PCs are generally well-organised. They ve been bitten by the time-wasting bug and have mended their ways. It s the smaller companies (at least amongst the ones we spoke to) that didn t seem to realise how much of employee productivity they were losing. An HR manager for a small services company (10 PCs) was shocked when we told her what other bosses were saying. We decided to sow the seeds of doubt in her head, installed a monitoring software on a server, enabled logging, and went back after three days. I can t believe it, I can t believe it, she repeated, when we showed her that her 10 PCs had sent / received over 5,000 IMs in those three days. Taking an average of 10 seconds wasted per message sent / received (they have just a 256K connection), that worked out to 5,000 x 10 = 50,000 seconds / 3,600 = almost 14 hours of productive time wasted. Close to 30 minutes a day per PC!

With bills to make, payments to collect, and accounts to be tallied, we re betting she s waiting for this article to see how to stop her company s PCs from being misused thusly.

As a smaller company, we have to work doubly hard to compete with larger, richer companies. I m certainly not going to rock the boat and ban IMs, but I will send out a memo to the employees. She thanked us for the help and says she will make sure all her employees read this article.

Enough of the reality bytes: time for some problems and their solutions...

Unnecessary Browsing

The most common complaint we received was that employees waste time surfing. Not only is productivity affected, it s also a complete waste of bandwidth. Here in India, whether at home or at work, we still pay for bandwidth by the MB or GB, so any savings is always welcome.

A proxy server can even be used to block access to sites, or even be configured to only allow access to certain sites

Proxy Server

A proxy server can do a lot more than restricting employees to certain sites. If it has a caching system, it can help cut your bandwidth costs in half. Instead of fetching the same page 10 times for 10 PCs, it does so once, and serves the same page to anyone who requests it.

Apart from bandwidth savings, a proxy server also helps you identify who s doing what, and visiting what sites, for how long a day. No, you don t have to get all worried now and think lawsuits: this is not spying, it s merely called logging. You have a right to know how your proxy server is being used.

Apart from threatening your lackadaisical employees with its logging capabilities, a proxy server can even be used to block access to sites, or even be configured to only allow access to certain sites. Another boon is the fact that you can ban many file extensions, such as .exe, .zip, .rar, etc. to prevent your employees from downloading so much. If you choose your proxy solution well enough, you can even block all IM protocols.

Suggested Software

Squid (www.squid-cache.org): If you can spare a server PC for Linux, this is the software you should use. It supports caching (accelerated surfing), SSL, and DNS caching, is very, very scalable whether it s 10 PCs or 10,000 accessing the Net, it s stable and if that weren t enough, it s open source and completely free! Though it does run on Windows via emulators, you re better off running it on Linux. It s not newbie-friendly, though, so if you haven t a clue about Linux or editing configuration files, steer clear.

FreeProxy (www.handcraftedsoftware.org): All the features you d want, including detailed logging, complete access control, ban lists, caching, authentication, and much more. In short, it s quite a well rounded proxy / caching / Net access restriction software, it s free, it s scalable, and runs on Windows. For smaller setups, this is a good choice because it just sits on a computer, runs as a Windows service, and will bring down bandwidth usage considerably.

WinGate (www.wingate.com): Medium-sized

FreeProxy is good for safeguarding small businesses from the costs associated with bandwidth wastage by employees goofing off businesses might want to look for something more robust and secure, and this is a good alternative. It features authentication, detailed per-user or per-service logging, a good firewall, protocol-specific restrictions, and much more. Overall it will give any systems admin the control he craves, while making sure your network is secure and that your users are not up to mischief. Implement this solution, and you're sure to dissuade any goofing-off online because of its comprehensive logging and report-generating capabilities. However, the feature you bosses will love the most is its AI Filtering just choose to block adult, gambling, sports, chat, Web mail, and even job sites, and WinGate will use a little programmed AI and a rather large global database to prevent your users from accessing such content. No more feeding in individual sites to block just let WinGate block them automatically. The bad news? You're going to have to cough up considerable cash for this gem: the licenses are priced by the amount of connected users, ranging from as little as three to an unlimited amount. Don't confuse this with the number of PCs you have, because if you have 100 PCs in your office, you could consider buying a license for 25 or 50 users, since not all 100 will be accessing the Net at the exact same time. Licenses available for WinGate standard are 3 / 6 / 12 concurrent users, and for the Professional version, 6 / 12 / 25 / 50 / 100 / 250 / 250+ concurrent users. Prices range from $75 (Rs 3,375) for 3, $200 (Rs 9,000) for 12, to $1700 (Rs 76,500) for 250+ concurrent users.

Games

After the problem of e-goofing off, the most popular complaint was games. A lot of people have taken to playing games online (Yahoo! Games anyone?), but since more and more companies are filtering content and blocking access to such sites, Windows games have remained popular. *Solitaire* in particular is infamous for being the game of bored secretaries and employees, and most Windows games are just too much to resist they're just sitting there in the Start Menu, begging to be played!

Get Rid Of Them / Control Them

There are several ways you can prevent access to Windows games. You could just uninstall them from your PCs by going to Add/Remove Programs (**Start** > **Run** > **appwiz.cpl**) and then clicking on Add/Remove Windows Components on the left. Select Accessories and Utilities and then click Details. Uncheck Games and press **OK** > **Next** > **Finish**. Windows games will be uninstalled.

If you're running a Domain Controller (see Mayhem Management, *Digit* February 2007), you can uninstall these games from all PCs, and then prevent your employees from re-installing them.

If it's not just Windows games, but all games you want to prevent access to, you're going to need some software help...

Suggested Software

StopGame (www.askmesoft.com): Now here's a must-have software for all bosses... StopGame doesn't just block games; it allows you to completely control if and when your employees play them. This is the perfect retort to those slackers who claim to need a little relaxation at the fag end of a hectic day. If you remove the games, you'll get complaints; keep them and your employees goof off; but what if you could restrict access to games like *Solitaire*? Half an hour a day, four hours per week, only during official lunch hours... any sort of restriction is possible. If the employee tries to break the rules that you've set and start a game, poof it just closes right down again. It's like you sitting there and pressing end-task time and again, without the maniacal laughter or evil giggling, of course! All you have to do is install the software, follow the instructions in the help files, add the games you want to block / restrict (Windows games or otherwise), and watch twitchy-fingered employees with withdrawal symptoms order that extra cup of coffee. You will need the StopGame Office version of course, available at **www.askmesoft.com/stopgame_ office.htm**. It will cost you anywhere from $18 to $9 (Rs 800 to 400) per copy depending on how many PCs you want to install it on. For example, four licenses will cost $18 each, 15 will cost $15 each, and 51 or more will cost $9 each. We're sure our editor would love to get something like this to prevent us from playing *Quake III Arena* all the time, but unfortunately, he knows we geeks will just find a way around it! For most employees however, this is quite a foolproof solution.

People use IM to make friends, date, flirt, learn about different cultures... problem is, so many people are doing so on company time, using company bandwidth!

Chat / IM

It's just so easy now, isn't it? We're sitting at our PCs chatting with people across the world. We can even have voice conversations for free, and see each other via webcams. Chat is a beautiful technology, loved by every mother and grandparent who has a child / relative abroad. It saves a bundle on phone calls as well. People use it to make friends, date, flirt, learn about different cultures... problem is, so many people are doing so on company time, using company bandwidth! Most of the bosses we spoke used words we cannot publish to describe Instant Messengers (IMs).

Use StopGame, of similar software to prevent employees from playing games

Block em

There are many ways to block IM traffic. You could just block/disable the protocol ports from your proxy or NAT server. A LAN Domain Controller can prevent IM software from being installed or used. A really adamant systems / network administrator can ensure that no employee connects to any IM networks, ever! However, instant messaging has become more a part of our lives than we realise. Many employees use IMs to chat with clients it s free, instantaneous, and nowhere as close to invasive as a phone call. So the new problem for both small / medium businesses and enterprises is not how to block IM access, but how to regulate it.

Suggested Software

Symantec IM Manager (www.symantec.com): What was once a free software called IM Logic has been bought over by security specialists Symantec and made into a security solution for any business. If you re worried about IMs being a security risk, or just a productivity killer, this is a solution you ll love as a boss and hate as an employee. The software sits on a server and can log all IMs your employees send. It can block IMs that contain certain phrases (in real-time), block file transfers or just certain file types, it logs everything that s said in IM form, and generates reports as basic as who (user ID and IP) chatted how long and to how many people, to reports that will give you usage patterns and the exact messages sent. It can connect to a SQL database and store all information there, so admins can just search for keywords or users and get detailed information. It is also very legally-aware, and informs users and the people they speak to of its presence, so no lawsuits will ruin that sweet taste of victory over IMs. If anything can stop your employees from goofing off and chatting all day, IM Manager can. Just send your employees a mail informing them of your decision to install this software (with a link to the homepage) and your productivity should increase instantaneously. It s not cheap, obviously, and you can expect to shell out $40 (Rs 1,800) per license (per user) for small-sized organisations, or $30 (Rs 1,350) for enterprises.

P2P

Here in India, a lot of employees take advantage of the fat Net pipe that companies provide, and use it to download illegal software and content using P2P networks. Apart from increasing a company s Internet bill, the illegal use can land a company with a slew of lawsuits. P2P software are known to tunnel (bypass restrictions by using another protocol s ports), and can even use normal HTTP ports (80) or POP ports (110 or 25). Basically, if you re connected to the Net, chances are your employees can use P2P software and access networks to download illegal content.

Stop Piracy

As mentioned, blocking P2P is a lot harder than anything else mentioned before. Thankfully there s software available that will put your mind at ease. Such software is rarely cheap, however.

Suggested Software

IM Lock Professional (www.comvigo.com): Yes, we know. This does fit into the category of an IM blocker, and the name suggests that s all it does... However, IM Lock is much more than just an IM blocker. This software is a little more expensive than Symantec s IM Manager, but it s primarily a blocker, not a Manager . It can block access to all known IM networks, Web-based IM services, streaming media sites, and yes, almost every known P2P protocol and related sites. So if BitTorrent is the bane of your existence, get this and live peacefully, because it will block not just the entire Torrent protocol, but also access to any site that has

Torrent files on it. Apart from this, it will also prevent access to other popular torrent clients such as LimeWire, eDonkey, KaZaA, Bearshare, eMule, Morpheus, and many more.

Doing Nothing

With all the little cubicles and bays in today's office, it's almost impossible to make sure that everyone is working. Now there are a lot of employees who don't need to goof off in any of the various ways we've described above. Although rarer, this breed of employee is much more prone to goofing off, because you've spent all that money blocking things they never used in the first place. How can you make sure that a few employees are not sitting around reading the sports headlines, or curled up in that plush chair reading a book? Honestly, you may not even be able to tell if they're in their seats or not. Let's not even start thinking about what they're doing when you're out of office at a meeting or travelling abroad.

Depending on the laws of the land, the software solutions mentioned here might constitute breaking the law if not implemented correctly

Monitoring / Spying Software

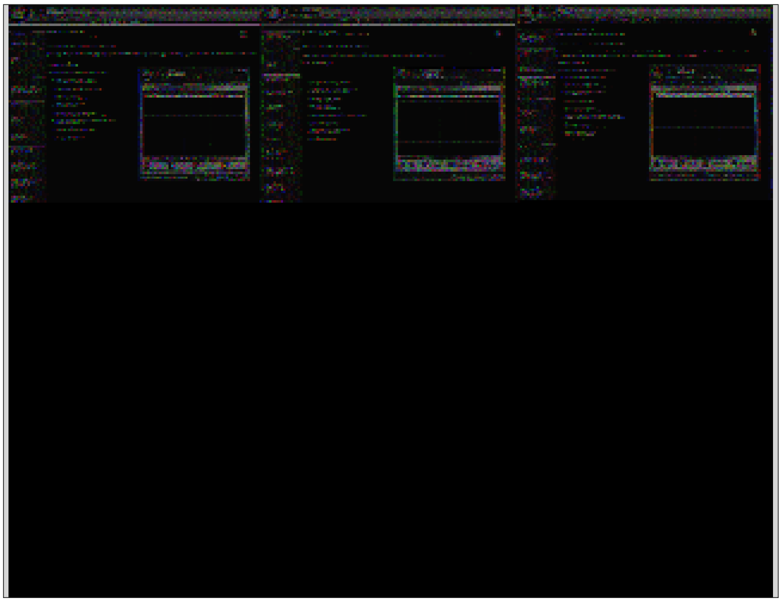
A keylogger or similar spying software can help track employee productivity. Such software can help you understand how each employee utilises time, and what they're doing in front of their PCs. For example, an employee who falls asleep will have the same screen in front of him for a long period. In such a scenario, a screen grabber spy software can show you that they haven't done anything for the past X number of hours/minutes.

Suggested Software

NetVisor (www.netvizor.net): The ultimate tool for any boss, NetVisor sounds almost too good to be true. This powerful software can tell you anything you need to know about PC usage of any employee in your company... seriously! The list of features is so long that we're going to have to give you a URL so you can see for yourself **www.netvizor.net/features.shtml**.

We'll list the few that will excite you the most: per-PC logging of every keystroke typed, site visited, files opened, chat conversations, e-mail sent/received, applications run, software installed, and much more. It can also create reports and e-mail them to you, so even if you're out of office, you can check your mail and see who was doing what and for exactly how long. It can take snapshots of every desktop and upload it to a password-protected local or FTP server, or just mail each snap. You can view any computer's Desktop at any time over the network or the Internet. You can remotely run applications on any PC, look at what's stored on their hard drive, use End Task to kill any application you want, shut down/restart any computer, send messages to any computer screen, and freeze any mouse in the office (works great if someone's addicted to Minesweeper)! The software can be run in stealth mode to hide from all known anti-virus or anti-spyware solutions, and will not show up in Task Manager, the Registry, or even in startup. Of course, it also has the ability to show splash screens to users, warning them that they're being monitored good to prevent lawsuits. It encrypts all its log files, manages disk space and processor usage to make sure the PC doesn't become sluggish, and is easily configurable by even a novice.

System admins will rejoice, because since it is basically an enterprise product, it can be deployed over the network from a single location, or over an entire domain. For all practical purposes, this software acts like a killer virus or worm, and puts every computer's reins in your hands. Before you start swooning in the drunkenness of your imagined power, you should consider the prices: $295 (Rs 13,275) for up to five PCs, $495 (Rs 22,275) for up to 10 PCs, $1095 (Rs 49,275) for 51 to 100 PCs, etc., all the way up to $4,995 (Rs 2,24,775) for over 500 PCs! We warned you, such solutions are never cheap! If you're a paranoid boss however, you may want the control this beauty of a software can offer you. Incidentally, NetVisor runs on Windows NT, 2000, XP and Vista.



Using software like NetVisor can give you detailed information on your employees

Take Heed

Warning: Depending on the laws of the land, the software solutions mentioned here might constitute breaking the law if not implemented correctly. For example, installing a keylogger or recording IM conversations could be construed as illegal by courts, and even be a violation of privacy. However, since it's the company's furniture and PC, it can dictate the way it is used. Usually, just being upfront about the solutions you deploy, and getting employees to sign a waiver or acknowledgement that they are aware of the methods you are employing to increase productivity and security, is enough. Still, if you're planning on using any of these solutions, get in touch with your legal counsel.

All this will obviously not make you very popular, but it will certainly sit well with *your* bosses. So go ahead, be evil, surrender yourself to the Dark Side, and start making your employees miserable! ■

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OLD WAY TECH WAY

Getting New Furniture Made

Desks have this annoying way of collapsing the second they decide that the world has too many books for them to handle. There was also other furniture around the house that needed replacing, so it was time to summon the carpenters.

Nimish Chandiramani (nimish_chandiramani@thinkdigit.com)

The carpenters doing their usual act...

...and I step in to show them this

1	I describe the desk I want to the labourers. They listen intently and seem to comprehend, so this might go nice and smoothly like I'd hoped. Ah, naiveté...	There had to be a better way to get the rest of the furniture done, and the best way was to show them visually. I have the drawing skills of an epileptic rat, but I've been tinkering with Google SketchUp for a few days. I wonder...
2	The frame of the desk starts to look more like an oversized stool rather than the workstation I had asked them to make. This is unacceptable, so I get them to change it, explaining again exactly what I want at the bottom, and where I want the drawers.	I start with SketchUp, thinking that it'll take me just a few minutes to design a new cabinet; no such luck. I'm not limited by the software, but actually using those features to create something that will become real is a different ball-game.
3	The carpenters decide to use their own "creativity" to conjure up an abomination they call a footrest. This is all very disappointing, and I tell them so. Getting it re-done is going to take time, so I decide to live with it.	I struggle with SketchUp for a couple of hours, making sure that I use the exact measurements for the cabinet—I don't want to end up miscalculating anything.
4	And then they botch up the drawer. Turns out they miscalculated the length of the drawer, so now sitting at the desk makes opening it impossible, unless I'm willing to forgo some skin on my knee. Genius.	The cabinet's done, and I've verified the measurements and proportions a billion times. When I show it to them, the carpenters seem to realise that it's a Formidable Force they're dealing with, and get to work.
5	Well, at least the top's flat and the drawers open. I have to deal with the bizarre frame, but it doesn't interfere with my life so much.	This way is so much better. I've got my cabinet just the way I designed it!
	Convenience Meter: 2 (Just short of murderous rampage)	Convenience Meter: 4 (Learning new skills takes time!)

And The Winner Is...

If you•ve got the time, inclination and the skill, design your furniture in Google SketchUp or similar software like 3D Home Creator, and then have your carpenters build it. If they have any snags on the way, you can show them every detail in 3D, and they can•t even come back at you with a •your instructions weren•t clearŽ if things go wrong. Just make sure your proportions are right.

Digital Business

How Technology Can Help Your Organisation

110 Be A Big Bad Boss
114 Hand In Hand
116 Hardware: Buy Or Lease?

> Good mathematics education at the school level, and an emphasis on computer science concepts rather than solely on programming languages, are necessary to meet the demands of a trained, quality workforceŽ
>
> Sudipto Majumdar
> CTO
> Zapak.com

On the other hand, client-side programming consists of scripts that are designed to enable user interaction in the Web browser. Client-side programming includes verifying user data, making graphics dynamic, and making navigation easy. Actions performed within the browser, such as the pressing of buttons or filling forms, are responded to by sending a request for information to the Web server and displaying the received data. Client-side programming is responsible for all such behaviour of the browser.

•Different markup and scripting languages are used for server-side and client-side programming. One has to choose which side one wants to master, right from the beginning,Ž says Amit Shah, software engineer with Directi Group, which offers mass-market Web products and services. Shah•s advice is the starting point for anyone looking to Web programming as a career option.

HTML„HyperText Markup Language„forms the base platform to define the layout and structure of a Web document. HTML is complemented by various languages„PHP (Hypertext Preprocessor), ASP (Active Server Pages), XML (eXtensible Markup Language), and more.

With PHP, for example, it is possible to create levels of security against malicious attacks. Using ASP can make Web pages dynamically editable.

Languages

Scripting languages are relatively simple programming languages that are used to create scripts that, when inserted into a Web page, control various elements of the page, such as the user interface, styles, and HTML markup. The scripting language interprets requests for HTML documents and objects embedded in the HTML.

PHP and ASP are some of the widely-used scripting languages. They can result in a code base as much as ten times smaller for the solution for a problem (as compared to a •regularŽ programming language), which increases the programmer•s productivity by reducing the number of bugs in the code.

Scripting languages are of two types„client-side and server-side. Client-side scripting refers to the use of scripting languages such as JavaScript to automate applications that are executed on the client side (within the user•s browser). Server-side scripting involves executing scripts on the Web server before any data is passed on to the browser.

Server-side Or Client-side?

A person good at networking and with a ready hand on hardware and Web protocols is best suited for server-side programming. Individuals with good knowledge of databases and servers can opt to learn languages like Perl and Python for writing code for the Web server to perform object-oriented functions such as e-mail processing, advanced content management systems, general-purpose templates, and more.

The Languages	
Base platforms for Web page development	HTML, XML, PHP, ASP
Basic Programming	C, C++, PHP, Java, Perl, Python
Visual Programming	Visual C++, Visual Basic, Java, ASP.NET, Java Server Pages (JSP), AJAX (Asynchronous JavaScript and XML)
Database Systems	SQL (Structured Query Language), MySQL, Oracle, MSSQL (Microsoft Structured Query Language)

Perl (Practical Extraction and Reporting Language) is widely used for writing programs for Web servers involving tasks such as generating reports, database synchronisation, auto-updating of user accounts, etc. Python is used for writing basic CGI (Common Gateway Interface) scripts, advanced content management systems, Web application frameworks, processing e-mail and RSS feeds, etc.

Those who wish to be in client-side programming need excellent knowledge of browser technology, operating systems, Internet protocols and such, with the ability to format content received from the Web server in the best possible manner.

The third option„that of working with databases„can be taken up by those from a database background. For more on careers in database, refer to Digit, April 2007.

The Tools Of The Trade

An education with a specialisation in computer science increases the chances of selection for a Web programming job. Students with an engineering, IT, or mathematics background are considered the best fit for Web programming by the industry. Graduates and post-graduates having majored in computer science (BE / ME in computer science), or those with a degree (BSc / MSc) in mathematics or statistics enjoy preference over candidates from other backgrounds.

•The industry prefers BE candidates with experience in development languages, and those with a diploma from reputed computer institutes with a good academic background. Also, candidates from a science background with computing or mathematics as a major subject are also given preference,Ž says Harish Sukhwal, CEO, Hashtech Systems Pvt Ltd, which offers Web services including hosting, business process outsourcing, and security solutions.

Sukhwal also says that the skill set of a good programmer in today•s context should ideally be one of the following:

- PHP + MySQL + XML
- ASP + MSSQL + XML
- ASP.NET + MSSQL + XML + AJAX
- JSP + Oracle + JavaBeans

Candidates from other disciplines such as mechanical engineering, electrical engineering, chemical engineering, and others streams are also recruited, though.

•Information technology as a part of the curriculum for varied disciplines, such as commerce and arts, will ensure professionals are better prepared for the challenges of online business,Ž says Venki Nishtala, CTO, Rediff.com.

The perfect destinations to get equipped with the tools of the trade are universities and colleges approved by the All India Council of Technical Education (AICTE).

There are also private institutes that offer a number of short-term or one-year courses, which can be pursued for an additional qualification. They provide education and training in specific products (such as Dreamweaver, Fireworks, and FrontPage) and the syntax of languages like HTML, PHP, ASP, and Java, to name a few.

The quality of education at a private institute, however, depends upon the teaching facul-

Web Resources

Language	Sites
HTML	www.htmlhelp.com, www.htmlgoodies.com, www.pageresource.com
PHP	www.php.net, www.phpbuilder.com, www.php-resources.org, www.scripts.com, www.phpfreaks.com
ASP & ASP.NET	www.asp.net, www.worldofasp.net
Java, JSP	java.sun.com/javascript/, www.javascriptworld.com, www.javascript.com
XML	www.xml.org, www.topxml.com, www.xmlinfo.com, www.xmlpitstop.com
Perl	www.perl.org, www.perlmonks.org, www.theperlreview.com, www.perlcast.com
Python	www.python.org
All languages	www.w3c.org, www.w3schools.com, www.webdeveloper.com, www.programmersheaven.com, www.opendeveloper.org

ty, and is not standardised. One should assess the quality of education and placement credibility before enrolling in a private institution.

A decent demand for Web programmers lies in the Web portals industry, which by and large works in sync with educational institutions for the development of up-to-date computer labs for education in accordance with industry requirements, and for offering internships to students.

•The biggest challenge faced by programmers is obsolescence of their skill sets. The best bet is to invest time and effort in understanding the fundamental protocols and concepts well. Once this is done, any new programming framework or language can be very easily picked up, since vendors may change the syntax of programming, but they still need to fit it within the fundamental protocols, which never change,Ž says Sudipto Majumdar, CTO, Zapak.com, a leading Indian gaming portal.

Recruitment

Web portals recruit programmers on a large basis for research and development on their sites. A good programmer is expected to possess networking and hardware knowledge„knowledge of servers, routers, VPNs, and such. A blend of excellent software skills and decent hardware knowledge is a winning recipe for a fresher.

•On the software and programming skills front, logic is more important than any coding language. Programmers should select a language and upgrade themselves in that area instead of learning several languages and then become a jack of all trades. A good Web programmer should also understand the business logic behind Web site development,Ž says Sukhwal.

Training

Training on the work process and development parameters is imparted by the organisation itself.

•Depending upon the individual, training on networking concepts, Web protocol concepts, programming language training, database designing and conceptualisation, and Web site architectural concepts are imparted,Ž informs Majumdar.

The training period is usually between one and six months. During this period, the fresh employee is placed under a senior programmer.

Levels And Remuneration

Promotions and appraisals depend more upon the performance and individual contribution in a project as compared to experience in the field. The figures mentioned here are only indicative.

> “Adding to the demand for Web programmers is the advent of mobile phones that support browsing. There is a need for trained and skilled people who can build sites for the mobile platformŽ
>
> Lincoln Gada
> CTO
> Hungama.com

Level 1:At the entry level, most of the Web programming activity is done by Junior Programmers and Senior Programmers.

Junior Programmers / Software Engineers: They need to understand their assigned modules, and code and develop applications for particular modules of the broader Web site architecture.

Senior Programmers / Engineers: They are responsible for framing the site architecture and develop the different Web page applications and functions. The modular functionality of the site programmed by the junior programmers are tested, debugged, and then approved by them.

Level 2:A certain amount of management capacity is demanded of a senior programmer advancing to this level.

Team Leader: He assesses the needs of the team and designates work to the team members. His job also involves some programming along with testing and validation of the prototypes prepared by his team. The team leader helps junior and senior programmers to understand the architecture and functionality of the project.

Assistant Project Manager: This designation carries with it the tracking of the progress of the project, documenting progress reports, and passing on these to the project leader. They give project briefs to team leaders and maintain the project documentation.

Level 3: After reaching the top level, one can decide upon whether one wishes to be more on the technological or management side. This level is composed of the Project Managers and the Solution Architects.

Project Managers: Getting business, maintaining the design protocol standards of the organisation, interacting with clients for details about their requirements, and demonstration of prototypes to clients form the major part of their work profile.

Solution Architects: They focus on the architectural aspect of the site development projects. Solutions for adoption of particular products or software platforms for Web development are designed by these individuals.

A Closing Note

•The sky is the limit for good Web programmers, because slowly all programming is migrating from the traditional client / server model or Desktop-based programs to Web-based programming. With Web 2.0 picking up fast, AJAX programmers are in demand,Ž says Majumdar.

Web programming is an exciting career for those who can learn programming quickly and also feel the itch to make a better Web site when they see a poorly-made one. Learning the languages comes first; implementing that learning can be financially rewarding„and fun as well! ■

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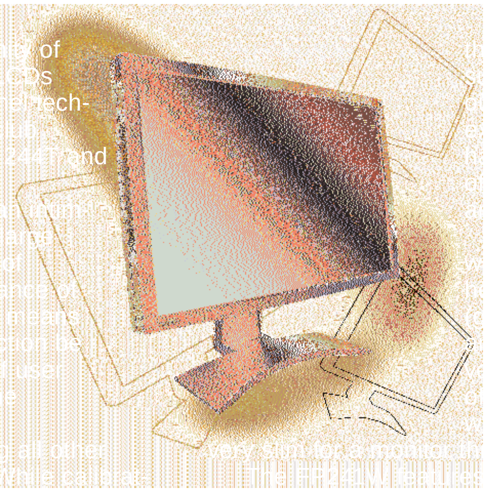
Experience Required„And Remuneration

Designation	Salary per annum (Rs in lakhs)	Relevant Experience (years)
Junior Programmer	0.6 - 2.4	2 - 3
Senior Programmer	2.4 - 4.8	3 - 5
Team Leader	5 - 10	5 - 7
Asst. Project Manager	10 - 14	7 - 8
Project Lead/Manager	15 - 25	8 - 12
Solution Architect	15 and above	8 - 15

17 Inch LCDs

Intex	Jetway	LG	NEC	Samsung	Samsung	Viewsonic	Viewsonic
1703	1741S	L1732S	LCD170V	713BM Plus	740N	VA1703w	VA703m
7.04	7.09	4.58	4.88	7.87	4.78	7.44	7.29
500:1	500:1	700:1		1000:1	600:1	500:1	700:1
TN	TN	TN	TN	TN	TN	TN	TN
1280x1024	1280X1024	1280X1024	1280x1024	1280x1024	1280x1024	1440x900	1280x1024
12	8	8	8	5	8	8	8
NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA
5.00	6.00	NA	NA	5.75	NA	6.00	5.25
/	/	/	/	/	/	/	/
36	38	35	37	42	34	21	35
/ / / /	/ / / /	/ / / /	/ / / /	/ / / /	/ / / /	/ / / /	/ / / /
6.00	6.00	6.25	6.50	6.75	7.25	6.25	6.25
6.00	6.00	6.50	7.25	6.50	6.50	7.00	7.00
7.25	6.25	6.50	7.00	7.00	7.00	6.75	6.75
37.37	38.03	39.23	39.06	39.50	37.40	39.26	39.17
6.35	6.40	6.50	6.69	6.45	6.25	6.65	6.65
6.25	6.25	6.50	6.63	6.75	6.38	6.38	6.50
6.46	6.71	6.58	6.54	6.65	6.15	6.71	6.75
6.63	6.38	6.50	6.63	6.56	6.44	6.69	6.56
6.25	6.50	6.75	6.50	5.75	6.75	6,75	6.50
6.75	6.25	6.50	6.50	6.25	6.75	6.50	6.50
6.50	6.50	6.75	6.75	7.00	6.50	6.50	6.50
6.50	6.50	6.50	6.50	7.00	6.50	6.75	7.00
6.50	6.50	6.50	6.50	6.75	6.50	6.75	6.50
6.50	6.50	6.75	6.50	7.00	6.75	6.50	6.25
6.50	6.50	6.50	6.50	6.50	6.50	6.75	6.50
6.50	6.50	6.50	6.25	6.75	6.50	6.25	6.50
6.75	6.75	6.75	6.25	6.50	6.50	6.75	6.75
6.25	6.25	6.50	6.25	6.75	6.50	6.50	6.25
6.50	6.25	6.50	6.50	6.75	6.50	6.75	6.50
6.25	6.25	6.50	6.25	6.25	6.25	6.25	6.25
6.50	6.50	6.50	6.50	6.50	6.50	6.50	6.50
6.25	6.5	6.75	6.5	7.5	7	7.25	7
5.75	6.25	6.25	6.00	6.00	6.25	6.50	6.50
7.04	7.09	4.58	4.88	7.87	4.78	7.44	7.29
37.37	38.03	39.23	39.06	39.50	37.40	39.26	39.17
13.86	12.76	12.14	8.50	6.71	12.75	12.75	12.09
58.26	57.88	55.95	52.44	54.07	54.93	59.45	58.54
9,200	9,990	10,500	15,000	19,000	9,999	9,999	10,550
Very cheap lacks performance	Well Priced Lower Contrast Ratio	Well Priced, good performer Lower Contrast ratio	Good looks Pricey	good performer very pricey	ultra narrow bezel performance	Widescreen, performance None in particular	Decent performance None in particular



RATINGS	
Features	★★★★⯪
Performance	★★★★⯪
Build Quality	★★★★○
Value for Money	★★★★○
Overall	★★★★○

RATINGS	
Features	★★★⯪○
Performance	★★★⯪○
Build Quality	★★★★⯪
Value for Money	★★★○○
Overall	★★★⯪○

RATINGS	
Features	★★★⯪○
Performance	★★★⯪○
Build Quality	★★★⯪○
Value for Money	★★★★○
Overall	★★★⯪○

RATINGS	
Features	★★★⯪○
Performance	★★★⯪○
Build Quality	★★★★○
Value for Money	★★★○○
Overall	★★★⯪○

RATINGS	
Features	★★★★○
Performance	★★★★○
Build Quality	★★★★○
Value for Money	★★★★○
Overall	★★★★○

bar comparing the edges and the centre (this should not be the case).

Intex s 1904w performed even worse than the JM1941DF. While calibrating using DisplayMate, we were unable to get many grey blocks on a black background. The purpose of this particular screen is to check the monitors black levels, and contrast ratio. Tuning the monitor to make more invisible grey boxes appear was only possible if we sacrificed background black levels. There were also issues with colour intensity tests especially for blue. We don t recommend this monitor for gamers, and image editing professionals should avoid this like the plague. However, the price (Rs 11,300) makes it attractive for those working with documents and online content. It is aesthetic enough for an office monitor, and casual home users will be interested to note that many 17-inch monitors cost as much as this one you re virtually getting 2 inches free!

The ASUS VW192T suffered in the reverse video and reverse text tests green, yellow and cyan weren t visible on a grey background, and that s not the end of it. There is a contrast ratio problem with the VW192T that s a mile wide, and quite noticeable with colour gradations in movies. This panel also has slightly lower brightness levels due to which the HDR effects in Oblivion seemed a little less bloomy than we re used to. This last point however is not really a contrast ratio problem as we mentioned, but a luminance problem not enough nits (lower Cd/m^2 spec).

Decision Time

The 19-inch category was closely fought, no quarters taken and none given. AOC took home gold with Digit•s Best Buy Gold Award its performance and the brilliant pricing saw it in good stead. The Silver was bagged by the ViewSonic VG921M, as it out-did its widescreen sibling (VA1912W) by some margin. However, take a look at the raw performance scores and you ll see both the 8-bit panels NEC s far ahead in this regard. The MultiSync 1990FX and 1970NXp are the only options for discerning professionals with no price constraints.

17-INCH LCDS

The 17-inch LCDs represent the new entry level for anyone looking for flat-panel PC monitors. They ve successfully taken over the mantle from the 15-inchers as the face of value in the Indian market.

HDCP & LCD Monitors

High-Bandwidth Digital Content Protection (HDCP) is a data encrypting system initiated by Intel Corporation and developed by Silicon Image. As the name suggests, HDCP protects digital video and audio content by encryption at every stage of transmission as it moves across digital connects namely DVI and HDMI to, ultimately, your screen. This protection is necessary to combat the oldest evil known to digital content piracy or unauthorised access and duplication.

A PC or a DVD player has to be licensed with HDCP controls before it can play HDCP-protected content. All upcoming standards including Blu-Ray and HD-DVD feature this form of content protection.

What you do need to know is HDCP is built into a few LCD monitors, which you will need to invest in if using such High-Definition content especially on Windows Vista.

Do also note that when using analog connectivity i.e. D-Sub, it s possible to bypass encryption completely, and display HD content without HDCP. Microsoft has an answer to this drivers will either constrict resolutions or disable output completely when HDCP content is routed through analog sources instead of digital sources.

The 17-inch LCD is an ideal purchase for home and office users. Better, in fact, than 19-inch monitors if heavy multimedia usage is not your cup of tea. In fact, 17-inch monitors offer the same resolution as 19-inch 1280x1024 and 1440x900 in case of widescreens.

Don t expect to see much of the costlier S-IPS, MVA or PVA panels here with value taking priority, regular 6-bit TN panels are used. You ll still get 24-bit colour however, courtesy Dithering (see box Are 8-bit Panels Worth It?).

Features? What Are Those?

Any entry level product is mainly focused on pricing, and features are a luxury most manufacturers decided they could do without. As testament to this, none of the 17-inchers sport advanced features like height adjustment and portrait mode. In terms of aspect ratios, ViewSonic s VA1703w was a shocker the only 17-inch monitor sporting widescreen dimensions. It s compact and offers the same ultra wide 1440x900 pixel resolution that a 19-inch widescreen offers that s a lot

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Decision Maker

Your Usage	What to Buy
Home, Internet, Basic Multimedia	AOC 177V, VA1703w, AOC 197S
Office Use, Browsing	AOC 177V, AOC 197S, ViewSonic VG921M
Average Gaming	BenQ FP92W, Acer AL1916, BenQ FP71G+
Hardcore/Enthusiast Gamers	ASUS PW201, ASUS MW221u
Design Professionals	NEC MultiSync 1990FX, NEC MultiSync 1970NXp
Multimedia Aficionados	BenQ FP241W, ASUS PW201
Large Screen, aesthetic conscious	Dell E228WFP

AOC 177V
Value Performer

of horizontal viewing space for your eyes! However, the bright green power LED disturbs especially when working in the dark it s simply too bright; thankfully, it s not red or even blue! This is common to nearly all ViewSonics.

Acer s AL1706 attracted attention, and held it it s built on the same slim, ultra narrow bezel, attractive lines as the AL1906 but unlike its larger sibling, there weren t as many show stoppers.

Visually, Dell s 1707FP has to get top honours the stands are absolutely amazing, and we couldn t figure out how such a slim stand could hold the monitor stably. And stable it was even more so than some models with bases that occupied double the surface area. Dell also has some of the narrowest bezels around and this makes for great dual-monitor setups with hardly any gap between screens. Samsung s 740N also has a narrow bezel, though the round stand is a bit ugly.

Intex also makes attractive monitors and their 1703 is no exception, but it sports a bulky power adapter. This is an unnecessary headache why bundle an adapter when it can be built in? It certainly doesn t add too much bulk, as we ve seen from the other LCDs Samsung s 713BM Plus has i menu buttons positioned on the bottom of the monitor s bezel, and accessing them is a royal pain.

The Numbers Game

When it came to pure performance, figures were close, but two monitors fought harder than the rest for pole position. The position for top performer jockeyed back and forth between ASUS PM17TX and Samsung s 713BM Plus, with Dell s 1707FP watching from a close third.

Right on the 1707FP s heels snapped Acer s AL1706, BenQ s FP71G+, LG 1732S and both the ViewSonics. Despite its success, the PM17TX from ASUS wasn t without issues there was moirØ present in the coarse grained tests. The Samsung 713BM Plus didn t have any issues; unfortunately the price (Rs 19,000) will scare away most customers before they even switch it on! Considering it s a TN panel-based monitor, Samsung should seriously consider revising its price.

Samsung s other offering in this category the 740N was way behind the leaders line of sight. Though priced well, it has issues with black levels and contrast ratio. This was noticeable with improper transitions in shade intensity in the 256-colour test. Certain shades of gray had some noise as well minute, but noticeable. We don t recommend this monitor for anything more than browsing and office work like documents and spreadsheets.

Both Acer s AL1706 and BenQ s FP71G+ caused us no concern throughout the tests. While they weren t the best monitors performance wise, they didn t have any mentionable issues, and if the price of the Samsung 713BM Plus and the ASUS PM17TX is a cause for concern, these two are for the frugal at heart Rs 11,000 and Rs 10,800 respectively.

Shockingly, one of the cheapest monitors in the test also performs quite well, closely tailing its betters. We re talking about the AOC 177V, which at Rs 9,800 breaks the 10,000-Rupee barrier. Other sub-10,000 models weren t so hot on performance especially Jetway s 1741S and Intex s 1703. ViewSonic s VA1703W is sub-10,000 in the strictest sense of the word (Rs 9,999), and also performed commendably. In fact, it managed to out-distance its non-widescreen sibling, the VA703M, reversing the results of the 19-inch tests, where the non-widescreen VG921M kayos its widescreen sibling (the VA1912W) with no apparent effort.

Decision Time

If anything, the contest here was even more fiercely fought than in the 19-inch category; victories weren t clean, and all sides drew blood. AOC made a clean sweep with top honours and takes Digit•s Best Buy Gold in the 17-inch category as well. Their champion, the 177V, is a winning combination of price and performance. The Silver goes to the sole widescreen in this category the ViewSonic VA1703. ■

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Contact Sheet LCD Monitors

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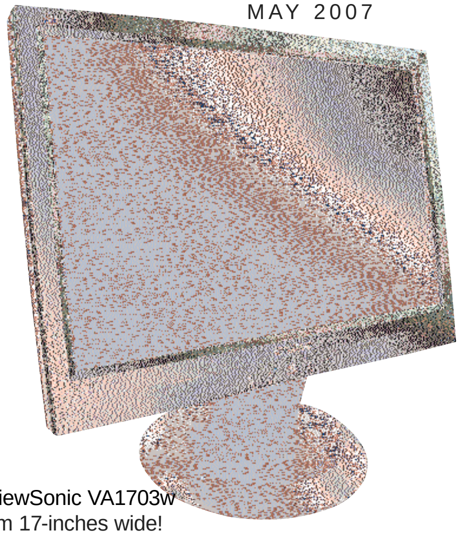
ASUS	ASUS Technology Pvt. Ltd	022 4005 8888	media_india@asus.com
BenQ	BenQ India Pvt Ltd	9312378705	Sales.EnquiryIn@BenQ.com
Dell	Dell Computers Asia Pte Ltd	080-2506-8026	NA
HP	Rashi Peripherals	22-67090909	navinderc@rptechindia.com
Intex	Intex Technologies	011-30888919	sanjay@intextechnologies.com
Jetway	Rashi Peripherals	22-67090909	navinderc@rptechindia.com
LG	LG Electronics India Pvt Ltd	9899302074	avarshney@lgindia.com
NEC	SHIBA COMP.PVT.LTD	011-30822106	sales@shibacomp.com
Samsung	Samsung India Electronics Pvt Ltd	011-41511234	rengith.nair@samsung.com
ViewSonic	Roop Electronics	022-26681921	umang@rooponline.com



ViewSonic VA1703w
I m 17-inches wide!

Are 8-bit Panels Worth It?

As we mentioned in *Enter The Matrix, Digit March 2006*, there are four types of LCD panels being mass produced (though not in equal numbers) today TN, S-IPS, MVA and PVA. TN panels are by far the cheapest to produce and to buy. These are typically 6-bit panels 6-bits for each colour, which translates to a total of 262,144 colours. However, by a method called dithering (basically interpolation) manufacturers reach the magical figure of 24 bits i.e. 16.7 million colours.

S-IPS and PVA panels are native 8-bit panels, so colour rendition is always superior. MVA panels are the middlemen they can use dithering, or be native 24-bit.

We have already established that professionals working with images and rendering should avoid 6-bit panels. Another problem inherent to TN panels is the inferior viewing angles. Manufacturers quotes for viewing angles are not always accurate, simply because the methods employed to measure viewing angles differ.

In our test, we noticed severe issues with viewing angles (vertical in particular) with almost all the 6-bit TN panels.

As the adage goes, all major problems are solved by financial convenience. This is true here as well TN panels are available in abundance and cheaper by a fair amount than MVA or PVA panels of the same size (S-IPS panels are the costliest). In India, more than 90 percent of all LCD models available are 6-bit panels 8-bit panels are mostly reserved for the 20.1-inch and larger categories. This means that anyone for a 17- or 19-inch LCD will have no option but to go 6-bit.

This said, the difference in price is worth the premium you pay for these higher-quality panels, but if (and only if) you plan on using your monitor for digital entertainment or for professional graphics work.

Audio Standards

A 19-inch monitor represents the best possible price point for someone interested in multimedia, but wanting something larger than a 17-inch panel. The cost difference between an entry level 17- and 19-inch monitor is as low as Rs 3,000, and as you ll see a bit later, there were 17-inch panels that cost much more than many 19-inch ones. Once you go above 19-inches, prices go haywire as you approach the realm of 20.1-inch and above panels.

A 20.1 inch LCD will cost at least Rs 4,500 more than a 19-inch, though there is hardly a difference in resolution between the two (note that 17-inch and 19-inch monitors have the same native resolution). Also most of the high-end panels S-IPS and PVA/MVA fall in the 20.1-inch and above size categories monitors sporting these panels will be costlier still.

If your usage is for multimedia games, movies, etc. skip the 17-inch category and invest that extra bit in a 19-inch screen; the sheer visual real-estate will be worth the extra cash. In fact, a 19-inch monitor will benefit even regular office applications Excel, most notably.

AOC 197S
Sturdy, wallet friendly performer

Feature Rich, But Not Fancy-free

This category had the biggest price range, so it was natural to expect a lot of different features. If we were to choose a looker, it d have to be the ASUS PG191 superb build quality, and a very classy looking buffed metal stand with a piano-black bezel topping things off. A pity the thing weighed about as much as a hippo. The stand also integrates a dedicated speaker driver unit, just behind the panel mount. Sound quality was very good not tinny as one would expect from integrated speakers. Add to the kitty a good 1.3 Megapixel webcam that s better than the generic webcams in the market. Beauty doesn t come cheap though, and the TN panel-based PG191 costs Rs 28,000, and has touch-sensitive menu controls.

How We Tested

The Test Bench
Processor: Core 2 Extreme X6800
Graphics Card: Geforce 8800GTX
OS: Windows XP Professional SP2

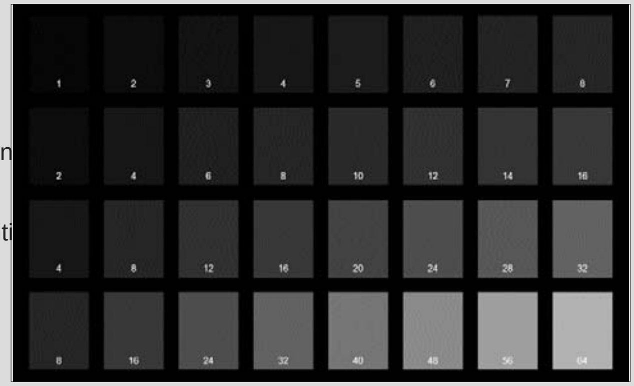
All tests were performed at the LCD s native resolution, an monitors have been categorised according to panel size.

We calibrated all the LCD s using Display Mate Video Editi calibration suite. Once calibrated, no adjustments followed.

Display Test Software
1. DisplayMate Video Edition
2. PassMark s MonTest

Real World Tests
1. Animated Video file (HD 1080p clips)
2. HD movie clips
3. Game tests
   a. Oblivion (game played in three different environments dungeon, outdoor and planes of Oblivion)
   b. F.E.A.R (fixed length demo)

Parameters Tested
DisplayMate Video Edition
1. Sharpness and Resolution Tests
2. Pixel Resolution Tests
3. Colour and Greyscale Tests
4. Miscellaneous Tests



The Gray Card test in DisplayMate

Reverse Text Test - DisplayMate

PassMark•s MonTest
Although most of the MonTest suite is similar to DisplayMate, there was one important test that it adds the Pixel Persistence test. Here, the monitors ability to draw and redraw a pixel is checked, which basically gives us an idea to its response time, and hence its suitability for gaming and movie-watching.

Multimedia Tests
The movie clips give as an idea of the test subjects suitability to multimedia, by testing and judging on parameters like brightness levels, contrast, pixel response, and colour rendition.

The Game Tests allow us to ascertain the suitability of the display to playing games. We play identical timed benchmarks across all the screens and look for input lag, ghosting, brightness and contrast, rendition of special effects like HDR, explosions, bullet time effects (in F.E.A.R). Oblivion provides us a good opportunity to judge these monitors rendition of outdoor scenery as the game has one of the best environments (graphically) in the business.

Among the others, the Intex 1904w and both the ViewSonic models looked quite sleek; the latter had better colour combinations while the 1904w had a slimmer bezel. Another beauty that caught our eye was AOC s 197S very good build quality and top notch fit and finish. The quality of moving parts was also up there. The two big boys from NEC (MultiSync 1990FX and MultiSync 1970NXp) also sport excellent finish and supreme build quality.

The HP L1940T features height adjustment a feature all other 19-inch monitors (besides NEC s duo mentioned above) missed out on. One welcome feature on the MultiSync 1990FX was the presence of portrait mode and you can actually tilt the screen to view web pages vertically, so there s less scrolling. The MultiSync 1990FX had one of the slimmest bezels of all, the only lament was the finish while excellent in quality it looked rather plain.

The NEC MultiSync 1970NXp featured a very cell phone-like 5-way joystick for menu selection and navigation. It works very well, and reduces the time taken to tinker with the monitors settings once you get used to it. Another nifty feature unique to this monitor is a trick horizontal swivel. The 1970NXp has a heavy metal base covered with plastic trim. Now when you attempt to turn the screen left and right the entire screen turns, while the metal base remains firm on the table. We say trick because it doesn t appear at first to be able to swivel horizontally.

Exploring connectivity options the ViewSonic duo (VG921M and VA1912W) were in the limelight for the wrong reasons this time they don t have DVI connects very shocking for the 19-inch category. Also guilty of this offense by omission were AOC s 197S, HP s L1916, Intex s 1904w, LG s 1952S, and NEC s own LCD190V. None of the 19-inchers featured HDCP support, which means HDCP protected content will not work on these monitors.

Jargon Buster

Backlight Bleeding: The surface of an LCD is backlit by CCFLs (Cold Cathode Fluorescent Lamps). The liquid crystals inside the panel orient themselves to block out all light when off, and re-orient so to allow light to pass through when on. The angle of this orientation determines the colour of the light we see.

Backlight bleeding occurs when this light is not completely blocked out, allowing some it to bleed through. It s noticeable on a black background, where some areas will have lighter flecks or bands than other areas. It s a problem that plagues a majority of LCDs out there. The good thing is that it s not very visible during regular work.

Pixel Response Times: This is the time taken for liquid crystals to switch on and off. Liquid crystals orient themselves to switch on and off by application of an electric current, and the time taken for this orientation is called Pixel Response Times.

Dithering: Dithering is nothing but digital noise introduced to simulate many shades of colour, starting with fewer shades. In LCDs, 6-bit panels (262,144 colours) are dithered to display 16.7 million colours (8-bit). Dithering is, simply put, interpolation and will never be as effective as true 24-bit colour. However, 6-bit panels are cheaper to manufacture making it a price-performance trade-off of sorts.

Nits: Nits is better known as candela per square meter. It is a measurement of screen brightness for all displays. Mathematically, Nits is Cd/m^2.

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ViewSonic VG921M
A birds eye view

Of Speed And Visual Quality

DisplayMate may be Jurassic to some, but it sure helps separate the wheat from the chaff as far as quality goes. One monitor that left the others wallowing in its wake with its sheer dominance in DisplayMate s colour and gray-scale tests was NEC s MultiSync 1990FX. It was the only LCD based around an S-IPS panel, and the difference in colour rendition shows clearly. If you re an image editing professional who wants accurate colour rendition when working with Photoshop or want accurate point-scaling when rendering, the MultiSync 1990FX is the monitor for you. Gamers will also notice the difference in colours, although S-IPS panels are plagued with slower pixel response times, and this may not be the best solution for games (cost considered). The 1990FX also performed commendably in the sharpness and resolution tests, just short of the MVA panel-based MultiSync 1970NXp.

Though most people will prefer widescreen monitors for movie-watching, the wide viewing angles that S-IPS and MVA panels provide are much better than TN panels meaning both these NECs are capable multimedia solutions. The bitter pill in both cases is the price.

A (hefty) notch lower in performance are the offerings from ViewSonic (VG921M) and HP (L1916, L1940T) both monitors offered some very good results throughout the tests. These were very closely trailed by the LCDs from AOC, BenQ and ASUS. The PG191 had vivid and crisp colours, but the intensity of the colours seemed artificially rich some tuning was in order. The dark horse was BenQ s FP92W. Despite the fact that it won no accolades it performed reasonably well in DisplayMate, it really came into its own with the movie and game tests. The HDR effects in Oblivion were literally eye-hurting this smacks of a good contrast ratio just what the doctor ordered for multimedia activities. The fact that this is a 16:10 (widescreen) monitor just adds to its appeal for the said audience.

HP s L1916 despite being a good scorer had one niggling issue slight backlight bleeding. This killjoy makes its presence felt on a dark background.

There were no really bad performers this time round all manufacturers are focusing on capturing the flat panel market, so they wouldn t dare introduce sub-standard stuff. However, there were those monitors which had minor issues, or performed consistently behind the others sometimes both. Jetway s JM1941DF was one such monitor. We were unlucky to get a piece with an eyesore of a dead pixel. However, this is a one off issue, and dead pixels usually mean immediate replacements so peace! There were also some issues with the black shift test there were noticeable differences in the grey-coloured

Digital Tools LCD Monitor Test

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Scoreboard 19 Inch LCDs

BRAND	Acer	AOC	ASUS	ASUS	BenQ	HP	HP
MODEL	AL1916	197S	PG191	VW192T	FP92W	L1916	L1940T
Features (Out of 25)	6.85	8.09	12.19	8.76	6.83	6.34	11.14
Contrast Ratio	700:1	700:1	800:1	800:1	700:1	500:1	500/700:1
Type of Panel (TN/IPS/MVA/PVA)	TN	TN	TN	TN	TN	TN	TN
Native Resolution	1280X1024	1280x1024	1280x1024	1440x900	1440x900	1280x1024	1280x1024
Response Time (ms)	8	5	2	5	5	NA	8
USB Hub (Y/N)							
No. Of Ports	NA	NA	3	NA	NA	NA	3
Card Reader (Y/N)							
Type of Memory cards supported	NA	NA	NA	NA	NA	NA	NA
Built-in Speakers (Y/N)							
Sound Quality (So 10)	NA	6.00	7.75	6.25	NA	NA	NA
VESA Wall Mount							
Swivel Base (V/H Axis)	/	/	/	/	/	/	/
Height Adjustment (Y/N)							
Portrait (Y/N)							
Power Consumption (Watts)	45	50	85	45	45	33	40
HDCP Support (Y/N)							
Inputs (D-Sub/DVI)	/ / / /	/ / / /	/ / / /	/ / / /	/ / / /	/ / / /	/ / / /
Extra Features			Webcam				
Design & Usability (So 10)							
Bezel Thickness	7.50	7.50	6.75	7.25	7.5	7.00	7.00
Quality Of Moving Parts	6.00	7.50	8	7.5	5.75	7.00	7.25
OSD Usability	6.75	7.75	6.00	7.25	7	7.25	7.25
Performance (Out of 60)	39.99	40.61	40.35	38.82	40.76	41.15	41.00
Displaymate Video Edition (So 10)							
Sharpness And Resolution Tests	6.50	6.50	6.50	6.30	6.45	6.65	6.55
Pixel Resolution Tests	6.13	6.38	6.25	6.00	6.13	6.75	6.63
Colour And Gray-Scale Tests	6.38	6.38	6.44	6.29	6.60	6.46	6.71
Miscellaneous Tests	6.31	6.50	6.25	5.88	6.56	6.69	6.44
Passmark MonTest (So 10)							
Pixel Persistence Test	7.25	6.50	7.25	7	7.25	7.00	6.50
Multimedia Tests (So 10)							
Movie Clip Pixel Persistence	7.5	7.25	7.5	7.25	7.50	7.25	7.00
Colour Rendition	7	7.25	7.25	6.25	7.25	7.25	7.00
Contrast	6.5	7.00	6.5	6	6.75	7.00	6.75
Overall Viewing Experience	6.25	7.00	6.75	6.25	6.75	7.00	6.75
Game Tests (So 10)							
F.E.A.R							
Pixel Response	7.5	7.00	7.5	7.5	7.5	7.50	7.50
Bullet Time Effects	7	6.75	7	7	7	7.25	7.00
Shadows	6.25	6.50	6.5	6	6	6.75	7.00
Particle Effects	6.25	6.75	6.75	6.5	6.5	6.75	6.75
HDR and Contrast	6.5	6.75	6.5	6	6.5	6.75	7.00
Oblivion							
Foilage, Scenery, Texturing On Grass	6.5	6.75	6.5	6.75	6.5	6.50	6.75
HDR Effects	6.5	6.50	6	5.5	6.5	6.75	6.50
Transparency Effects	6.5	7.00	7	6.75	6.75	6.75	6.50
Viewing Angles (So 10)							
Viewable Angle Test (Text)	7.75	7.50	7.75	6.75	7.75	7.75	7.75
Viewable Angle Test (Movie)	6	5.75	6.5	5.75	6.25	6.00	6.50
Features (Out of 25)	6.85	8.09	12.19	8.76	6.83	6.34	11.14
Performance (Out of 60)	39.99	40.61	40.35	38.82	40.76	41.15	41.00
Price Index (Out of 15)	10.50	13.13	5.63	12.12	11.25	7.88	7.00
Final Scores (Out of 100)	57.34	61.82	58.16	59.70	58.84	55.36	59.14
Price	15,000	12,000	28,000	13,000	13,999	19,999	22,490
	Good performance, slim bezel Slightly costly	good performance and looks gloss finish catches smudges	feature rich too costly	Looks Lacks performance	Good performer, decent price None in particular	too costly pricey	good performance very pricey

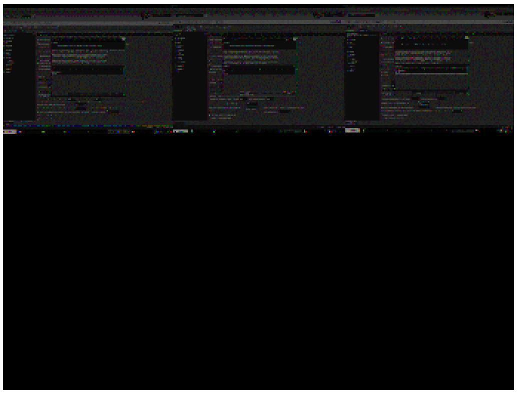
19 Inch LCDs

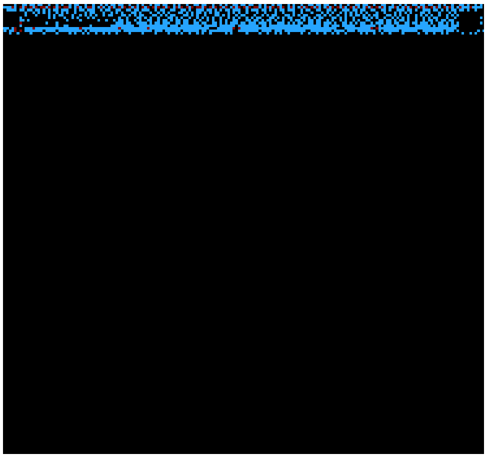
Intex	Jetway	LG	NEC	NEC	NEC	ViewSonic	ViewSonic
1904w	JM1941DF	L1952S	MultiSync 1990FX	MultiSync 1970NXp	LCD190V	VG921M	VA1912W
7.48	8.04	6.28	9.63	9.62	6.21	7.65	7.53
700:1	700:1	1600:1	800:1	800:1	NA	700:1	700:1
TN	TN	TN	S-IPS	MVA	TN	TN	TN
1440X900	1280x1024	1280x1024	1280x1024	1280x1024	1280x1024	1280x1024	1440x900
2.6	8	8	14	20	8	8	5
NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA
5.25	5.50	NA	NA	NA	NA	6.00	5.75
/	/	/	/	/	/	/	/
45	NA	33	40	38	38	55	32
/ / / /	/ / / /	/ / / /	/ / / /	/ / / /	/ / / /	/ / / /	/ / / /
7.00	6.00	7.75	8.50	8.00	7.75	6.25	6.00
6.50	6.25	6.50	7.50	7.75	6.00	6.75	6.50
6.25	6.00	7.00	7.50	7.50	7.25	7.00	7.00
38.48	39.42	40.28	44.34	44.24	39.59	41.10	38.85
6.30	6.30	6.40	7.30	7.50	6.80	6.70	6.10
6.25	6.13	6.50	6.88	7.13	6.50	6.75	6.25
6.17	6.37	6.48	7.21	7.06	6.58	6.79	6.46
6.44	6.25	6.44	7.25	7.13	6.56	6.63	6.38
6.00	6.75	6.75	7.00	7.00	6.25	7	6.75
7.25	7.00	7.25	7.00	7.25	6.50	6.75	6.25
7.00	7.00	7.00	7.50	7.00	6.25	7	6.50
6.50	6.00	6.75	7.25	7.50	6.25	6.75	6.25
6.50	6.50	6.75	7.25	7.25	6.50	6.75	6.25
6.75	7.25	6.75	7.25	7.25	6.50	6.75	6.75
7.00	7.00	6.75	7.25	7.50	6.50	6.75	6.50
6.00	6.50	6.50	7.25	7.25	6.00	6.75	6.25
6.75	6.75	6.75	7.50	7.75	6.50	6.5	6.50
6.00	6.75	6.50	7.50	7.50	6.00		6.25
6.50	6.50	6.75	7.00	7.25	6.50	6.75	6.50
6.00	6.25	6.25	7.25	7.25	6.50	6.5	6.25
6.50	6.50	6.75	7.25	7.25	6.50	6.75	6.25
7.50	7.50	7.50	8	8	6.75	6.5	6
5.75	6.00	6.00	7.50	7.50	5.75	6.25	5.75
7.48	8.04	6.28	9.63	9.62	6.21	7.65	7.53
38.48	39.42	40.28	44.34	44.24	39.59	41.10	38.85
13.94	12.12	11.67	4.50	5.43	5.63	12.26	12.26
59.89	59.58	58.22	58.47	59.28	51.42	61.01	58.64
11,300	13,000	13,500	35,000	29,000	28,000	12,850	12,850
Attractive looks Lower performance	Good looks, solid build performance	Slim Bezel, well built None in particular	excellent performance, build quality Costly	excellent performance, looks Costly	Sleek looks lacks performance	Good performer, great price None in particular	Widescreen, looks good Low performance

MAY 2007

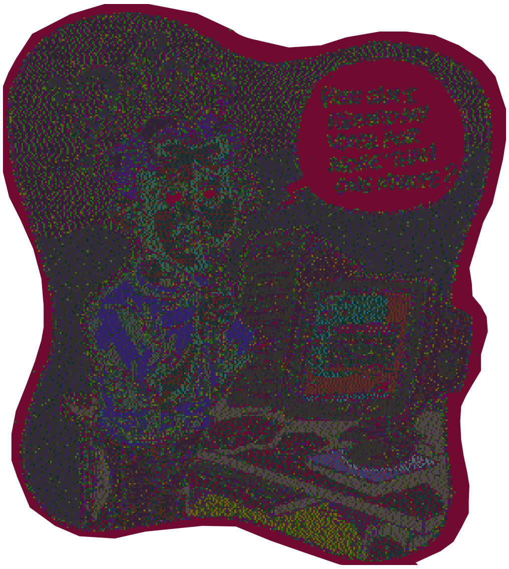
Scoreboard 17 Inch LCDs

BRAND	Acer	AOC	AOC	ASUS	BenQ	Dell
MODEL	AL1706	LM725	177V	PM17TX	FP71G+	1707FP
Features (Out of 25)	4.87	7.05	8.38	8.14	4.88	5.17
Contrast Ratio	800:1	450:1	800:1		500:1	450:1
Type of Panel (TN/IPS/MVA/PVA)	TN	TN	TN	TN	TN	TN
Native Resolution	1280x1024	1280x1024	1280x1024	1280x1024	1280X1024	1280X1024
Response Time (ms)	8	16	5	3	8	12
USB Hub (Y/N)						
No. Of Ports	NA	NA	NA	NA	NA	NA
Card Reader (Y/N)						
Type of Memory cards supported	NA	NA	NA	NA	NA	NA
Built-in Speakers (Y/N)						
Sound Quality (So 10)	NA	5.00	6.00	6.25	NA	NA
VESA Wall Mount						
Swivel Base (V/H Axis)	/	/	/	/	/	/
Height Adjustment (Y/N)						
Portrait (Y/N)						
Power Consumption (Watts)	45	45	37	48	40	34
HDCP Support (Y/N)						
Inputs (D-Sub/DVI)	/ / / /	/ / / /	/ / / /	/ / / /	/ / / /	/ / / /
Extra Features						
Design & Usability (So 10)						
Bezel Thickness	7.25	6.50	7.50	6.75	7.00	7.75
Quality Of Moving Parts	7.00	6.25	7.50	7.50	7.00	7.50
OSD Usability	6.75	6.50	7.75	6.50	7.00	7.50
Performance (Out of 60)	39.26	37.34	38.96	39.60	39.24	39.39
Displaymate Video Edition (So 10)						
Sharpness And Resolution Tests	6.70	5.65	6.65	6.20	6.60	6.55
Pixel Resolution Tests	6.63	6.00	6.50	6.63	6.50	6.63
Colour And Gray-Scale Tests	6.81	6.73	6.71	6.67	6.54	6.50
Miscellaneous Tests	6.69	6.63	6.69	6.63	6.63	6.81
Passmark MonTest (So 10)						
Pixel Persistence Test	6.50	7.00	6.75	6.75	6.75	6.75
Multimedia Tests (So 10)						
Movie Clip Pixel Persistence	6.75	6.50	6.50	6.50	6.50	6.75
Colour Rendition	6.50	6.50	6.50	6.75	6.75	6.50
Contrast	6.75	6.50	6.75	6.75	6.50	6.75
Overall Viewing Experience	6.75	6.50	6.75	6.75	6.50	6.75
Game Tests (So 10)						
F.E.A.R						
Pixel Response	6.75	6.50	6.50	6.50	6.25	6.50
Bullet Time Effects	6.75	6.50	6.75	6.75	6.50	6.50
Shadows	6.25	6.25	6.50	6.50	6.50	6.25
Particle Effects	6.50	6.25	7.00	6.50	6.75	6.50
HDR and Contrast	6.50	6.50	6.50	6.75	6.50	6.75
Oblivion						
Foilage, Scenery, Texturing On Grass	6.50	6.25	6.75	6.75	6.50	6.50
HDR Effects	6.50	6.25	6.50	6.50	6.25	6.50
Transparency Effects	6.25	6.25	6.50	6.50	6.50	6.50
Viewing Angles (So 10)						
Viewable Angle Test (Text)	7.25	6.75	6.75	7.25	7.25	7
Viewable Angle Test (Movie)	6.50	6.00	6.50	6.50	6.75	6.75
Features (Out of 25)	4.87	7.05	8.38	8.14	4.88	5.17
Performance (Out of 60)	39.26	37.34	38.96	39.60	39.24	39.39
Price Index (Out of 15)	11.59	13.42	13.01	9.44	11.81	9.44
Final Scores (Out of 100)	55.71	57.81	60.34	57.19	55.92	54.00
Price	11,000	9,500	9,800	13,500	10,800	13,500
	Good looker Slightly pricey	Price Performance and looks	Performance None in particular	Good performance Costly	Decent performance Aesthetics	Superb build price





[redacted]


How can I display video for more than one minute?

Bash it up!

Get started with writing your own Bash scripts

Jayesh Limaye

Bash„an acronym for Bourne-again Shell, is a Unix shell written for the GNU Project and is the default shell for Linux and Mac OS X. The beauty of Bash scripts is that they let you accomplish a group of tasks quickly and without much intervention from the user„much like batch files in Windows. The syntax is similar to structured programming languages like C, and will be easier to understand for people with prior knowledge of any such programming language. We assume that you are familiar with GNU/Linux commands and with the fundamental concepts of programming.

Saving And Running Your Scripts

You can use any text editor to write your Bash scripts„any Unix-based OS you work on should have Vim installed. Save the scripts with the .sh extension anywhere on your computer. After saving it, open the terminal (as root, if necessary) and go to the folder where you saved the file. To run your script, type bash yourscriptname.sh in the terminal prompt.

A Very Simple Script

The first thing that anyone new to programming learns is how to print •Hello WorldŽ on the screen:

```
echo Hello World
```

This is a one line script where the action performed by the script is to print •Hello WorldŽ on the computer screen.

Variables, Functions and If

Variables can be used in Bash as in any other programming language. It is simpler here, since there are no data types to worry about„a variable can be a number, character or string. They need not be declared as in structured languages; they•re created as soon as you assign a value to them.

Variables are of two types: global, which are recognised throughout the program, and local, whose recognition is limited to a function. If you have a block of code that you may want to execute a number of times, you write a function instead of the entire block all over again, saving time and resources in the bargain. Take a look at the example below:

```
#!/bin/bash
HELLO=Hello
function hello
{
local HELLO=World
echo $HELLO
}
echo $HELLO
hello
echo $HELLO
```

In the second line, the global variable **HELLO** is assigned a string value **Hello** . The third line declares a function called **hello** , which runs the code between the braces every time the function is called. Here a local variable **HELLO** is assigned a string value **World** which is valid only during the execution of the function **hello** . Notice that we have used the common name **HELLO** for both Local and Global variables just to show that this is possible. In the sixth line, the function declaration is complete. Line 7 displays **Hello** on the screen; in the next line, the function **hello** is called which prints **World** on the screen. The ninth line, however, prints **Hello** again. The string **World** is stored in the local variable **HELLO** but does not overwrite the value of the global variable of the same name.

You can add comments to your script to make it easier others to understand„any line starting with a # is interpreted as a comment and is not processed.

The •ifŽ command lets you decide the direction in which the script should proceed depending on conditions you set. The syntax is as below:

```
if condition
then
#condition is true
execute all commands up to else statement
#The else block is optional
else
 #condition is not true
 execute all commands up to fi
fi
```

Some Basic Tasks

1.=Renaming=multiple=files

The following script renames all the files with extension .txt to .bak.

```
#Use the   for   structure to run through all
files
for f in *.txt;
do
mv   $f    ${f%.txt}.bak  ;
done
```

Similarly, to remove the prefix •prefxŽ from a group of files, the following script is used.

```
for f in prefx-*;
do
mv   $f    ${f#prefx-}  ;
done
```

Here ${f#prefx-} removes the prefix prefx from the filename.

2.=Backing=up=files=modified=within the=past=24=hours

Here, we will back up the files created in the current directory within the past 24 hours in a •.tar.gzŽ file.

```
#!/bin/bash
FILEBACKUP=backup-$(date +%m-%d-%Y)
incrback=${1:-$ FILEBACKUP}
tar cvf    find . -mtime -1 -type f -print   >
$incrback.tar
gzip $incrback.tar
echo   The directory $PWD has been
backed up in archive file
\ $incrback.tar.gz\  .
```

Line 2 of this script embeds the date in the backup filename. Line 3 introduces the string variable **incrback** as the filename of the archive. Line 4 tar condenses the current directory into a single tar file, while the fifth line gzip compresses the resultant tar file to the final tar.gz output file. The last line prints to the console that the current directory has been backed up to the archive file.

3.=Mount=and=unmount=drives=as you=please

You may wish to mount and/or unmount your drives swiftly and at one go:

```
# mounting the drives
# This mounts a partition of your hard drive
mount /dev/hda2 /hd -t ext3
# This mounts the floppy
mount /dev/fd0 /mnt/floppy
# This mounts the CD-ROM
mount /dev/cdrom /mnt/cdrom
```

And for unmounting:

```
# unmounting the drives
umount /dev/hda2
umount /dev/fd0
umount /dev/cdrom
```

Ready to Bash?

We hope that you•ve warmed up to the concept of Bash scripting by now. This is barely the surface„Bash scripting becomes more interesting and powerful as you delve deeper, and practice is the best way to take your Bash programming skills to new levels.

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the imported images as well. Click OK. Then select File > Auto Import > Enable Auto Import to make Lightroom monitor the specified location.

Rejecting And Deleting Images

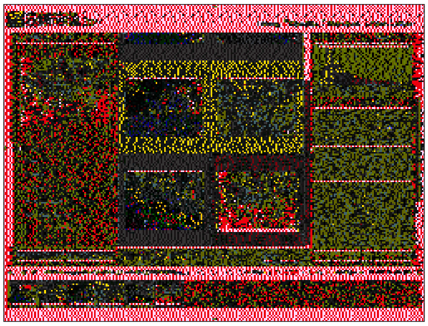
You•ll often find several bad photos in your collection that you want to remove. You can set flags to photos, one of them being •RejectedŽ. To reject a photo, right-click on the thumbnail in the panel at the bottom or in the library mode, and select Set Flag > Rejected The shortcut is [X]. To delete the rejected images, you can either go to the Photo menu and click on Delete Rejected Photos, or simply use the shortcut [Ctrl] + [Backspace]

Image Filter

Picked images are images you would like to access at a different time. A filter for the flags as mentioned above is available in Lightroom so you can easily view all the rejected photos or the picked ones. (•PickedŽ is one of the flags.) This can be accessed by clicking on the buttons on the bottom panel under the Filter section. The same filter can be used to display only images above a certain rating.

Full-Screen Mode

You can switch to full-screen mode to hide the title-bar and taskbar, thus increasing your workspace. Press [F] once to hide the title bar. Pressing [F] again hides the taskbar; pressing it again brings you back to the normal mode.



Quick Develop automatically improves pictures

Quick Develop

Quick Develop is a feature in the Library module. It lets you quickly set the optimum parameters for a particular image. Click on the Library button. Scroll down to the Quick Develop section in the right panel. You can select one of the available presets, or click on Auto Tone. Auto Tone will use the best parameters for your image. The presets are where you can directly click to make an image greyscale or sepia, for example.

Keeping Track Of Edited Images

While making changes to multiple images, without saving them, you can lose track of which images have been edited. It•s quite easy: on the thumbnails of the images which have had modifications done to them, there•s a small box at the bottom right of the thumbnail. You can reset the modification by right-clicking on the thumbnail, clicking on Develop settings, and clicking Reset.

Apply A Preset On All Images

Once you•ve applied a set of filters for a single image, you might want to apply the same effects to a batch of images. The Synchronize tool can be used for this. First, in the Develop module, you select the image you want to modify. Add effects and filters to it. You then press [Ctrl] + [A] to select all the images, or use [Ctrl] to manually select the images. Next, click on the Sync button in the right panel. You will then be prompted to choose„from a window with checkboxes for all the parameters„which effects you want to replicate on the other images. Unselect the ones you don•t need and click Synchronize.

Metadata Browser

The Metadata browser lets you easily browse through photos in a better-sorted manner. To access the Metadata browser, enable the Library mode, then on the left panel, scroll down till you come across •Metadata browserŽ. Here you can choose to access images by categories such as camera, lens, date, location, etc. Such information typically comes from the •EXIFŽ information that digicams embed into images.

Assign And Remove Keywords

Keywords will help improve the functionality of the Metadata browser. Most people enter keywords for an image through the •KeywordingŽ section in the right panel in Library mode.

Using the Keyword Stamper

An easier and more efficient way is to click on the Grid View button in the Library mode. Enable the keystamping tool by right-clicking on the arrow pointing down, which is on the same bar as the Grid View button. Enable Keyword. A keyword stamper will appear on the bar. Click on the text entry box next to the stamper and enter the keywords. Click the keyword stamper tool and click the thumbnails of the images you want to apply the keyword to. Click on the keyword tags section in the left panel, and you can now choose from the list of keywords to show the corresponding images.

Virtual Copies

Creating duplicates of an image„ so you can try out variations„can take up a lot of space. Virtual copies store the parameter information and effects that you add and apply it to the original image thus acting as a proxy. This can save a lot of disk space. To create a virtual copy, right-click on an image or thumbnail and click on Create Virtual Copy. A new image with a little paper-fold tag at the bottom left of it will appear. Make as many modifications to it as you like, and finally, when you•re satisfied, you can convert the virtual copy into a real image by exporting it to a file.

Fix Crooked Pictures

Photos sometimes end up a little tilted. Lightroom helps you fix this problem very quickly. Switch to the Develop module by clicking on the button in the module selection panel. Click on the Crop Overlay button and draw a box around the selection you want to straighten. Use the Straighten slider to the right to rotate the image. An even easier method is to use the Straighten tool and draw a line between two points on the photo, for example, the feet of a person, assuming he•s standing on a flat surface, and Lightroom will straighten the image for you.

Compare Results

It•s a good idea to compare the images you•re working on with the original to get a clearer idea of progress. Click on the Before and After View button to have a real time preview while in the Develop module.

Lights On, Lights Off!

Lightroom has a feature that lets you temporarily mask off the toolbars so the images being worked on are prominent. Do this by clicking on the Window menu and then on Lights Out. Press [L] will cycle through the various light modes such as Dim Lights, Lights On, Lights Off.

Open An Image In Third-party Applications

In cases where Lightroom isn•t doing enough for you, or you need a feature

Beyond All Recognition

Start with foobar2000•s Notepad-like interface and work your way up to a media player that•s right up there with the rest

Rossi Fernandes

Foobar2000 has been around for a while, but people tend to be turned off by the interface, which looks a lot like Notepadwith a few buttons. Here, we•ll give you a gist of the possibilities and things to do to reduce your Winamp withdrawal symptoms.

One step closer to Audiophilia

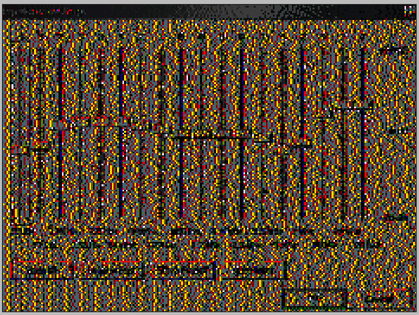
One of things you might hear from users of Foobar2000 is that it•s far better than Winamp when it comes to quality of music. One of the reasons for these claims could be the 32-bit output depth ceiling„which, however also needs to be supported by your hardware. Higher bit depths mean more information can be recorded and played back. 32-bit is still pretty far-fetched even now, and most cards like the Audigy can only do upto 24 bits. Winamp is limited to a maximum of 24 bits as well but foobar2000 works with 32-bit float point, which along with dithering and noise shaping can give the tiny advantage that hardcore audiophiles want. To do this, go to File > Preferences and click on Output under Playback. You can alter the output data format to the bit depth supported by your hardware.

Set the output depth your hardware supports

Note: Your sound card needs to support the bit depths you choose to use.

Equalizer

You also have an 18-band equalizer at your disposal, as opposed to Winamp•s 10-band equalizer, which lets you get more accurate audio results. You can access the equalizer by going toFile > Preferences > Playback > DSP Manager Add Equalizer to Active DSPs and click on Save All. Click on Configure to open the Equalizer. Once added, you can access the equalizer from the main window by clicking on View > Equalizer.



The 18-band equaliser

Kernel Streaming

Kernel Streaming skips the Windows mixer and is supposed to give better sound results than DirectSound. It also means that any volume control change in Windows will not alter foobar•s volume.

The Kernel Streaming plugin does not come with Foobar2000 any more. You can download it from the Optional components section on Foobar2000•s site„ www.foobar2000.org . To install this plugin, download the zip files and unzip them into the components directory: \foobar2000\components . To enable Kernel Streaming, click on File > Preferences > Playback > Output. Click on the Output Device dropdown and choose KS: •Your Sound deviceŽ. Click on Save All.

Kernel Streaming: Leave Windows out of it

Enhancing The Interface

The biggest drawback of Foobar2000 is the dull interface. There are plenty of interface-enhancing plug-ins to give foobar2000 a complete makeover„one of the most famous is ColumnsUI.

ColumnsUI

Get ColumnsUI from http://yuo.be/columns.php . The installation of the plugin is as before„unzip the file into foobar2000•s components directory, restart foobar2000 and you•ll be prompted to choose between the default foobar2000 interface and ColumnsUI. Volume control can be used by clicking on the current volume on the bottom-right of the window.

You can get readymade themes from the foobar2000 forums.

Add a UI to foobar2000

ReplayGain

Normalization is a process by evening out the differences in volume in either single tracks or albums. ReplayGain is a feature to do just this. ReplayGain is built into Foobar. You can alter the ReplayGain of tracks by right clicking on a particular track and clicking on ReplayGain > Edit ReplayGain Info (advanced). Here you can manually enter the amount of amplification you want. Normalization for multiple tracks or albums can be done in a similar manner.

Keyboard Warrior

It•s best to use the keyboard shortcuts to quickly change volume or track or start playing a random track. There is a default set of shortcuts already, and you can change or add more in File > Preferences > General > Keyboard Shortcuts . Create as many global shortcuts as possible„they will let you do tasks even while foobar2000 is minimised to the system tray.

There is alot more to Foobar„a good place to start finding out is on the Foobar forums„ http://forums.foobar2000.org. You•ll find plenty of plugins and customised layouts to try out and modify for yourself. You can spend plenty of hours having fun with on Foobar„all you•ll need is some patience and a willingness to experiment.

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Active WebCam 8.3

The Roving Eye

There are surveillance applications aplenty, but Active WebCam is different. This easy-to-use application not only lets you use multiple cameras to monitor activity. You can also record the footage for later use.

Wizards guide you through the camera setup process. You can then choose to send video with audio to any computer on your network that has the app installed, soundless video to HTTP users, and screen captures to FTP servers.

Live audio and video can be broadcast to the PY Software Web server (subscription to Dynamic IP Service is necessary, which comes as part of the 30-day trial), and Active Webcam can be configured to set permissions for users and groups, as also the maximum number of allowed visitors. For when the camera(s) detect(s) motion, it can be configured to sound an alarm, or e-mail the video footage / snaps it records, or start broadcasting live images and videos.

So who can benefit? You can transmit live videos of your friends• reunion parties over the Internet. You can use it as a surveillance mechanism at your front door. Jewellers will benefit from the multi-camera capabilities: keep an eye on multiple customers at the same time! You can set it to monitor your children while you•re away. Record simple video presentationsƒ just use your imagination and think of more uses!

In addition to all the above, you can use the Tools menu in Active WebCam to create and design a Web page to where you post videos and stills. Two nifty applications come bundled: a video player that can play captured videos in the native format, and a video editor that can convert captured videos to AVI with any installed compression, or to MPEG-1.

Active WebCam works with any camera detected by Windows. For $29, this is a steal„no gripes!

RATINGS	
Performance	★★★½○
Features	★★★★½
Ease of use	★★★½○
Value for Money	★★★★½
Overall	★★★★○

Contact:**PY Software**
Web site**www.pysoft.com**
Price:**$29 (Rs 1,300)**

VirusBuster Professional 2006

Funky looks, basic functionality

This is an anti-virus program from Hungaryƒ but don•t let that put you off! Let•s take a look at what it offers in comparison to other anti-virusesƒ

Post-installation, the first thing you see is the unconventional interface. There are no menus, and the icons are cartoonish! In addition, you end up going through multiple windows and clicks before actually scanning something.

VirusBuster Professional has the standard set of features„ the main file scanner, a shield that looks at background processes, and an Outlook scanner. There is support for scanning network shares as well; the same interface is used for this.

Different levels of sensitivity are available for each feature, and these can be altered by the user.

The Quarantine feature lets you scan the quarantine folder after a virus database update, and there•s automated restoring of cleaned files. The updater lets you choose from different locations such as HTTP, FTP server, CD, etc.

Security features were kept in mind as well. You can set an administrator so other users don•t tamper with the settings. The Rights Management lets you set permissions to the various components of the program.

CPU utilisation spiked between 30 and 50 per cent, but the memory consumption hovered around the 30 MB mark, which is pretty OK.

The help file is detailed, but is low on screenshots. The downloadable PDF manual, however, has plenty of screenshots for every feature and menu.

VirusBuster Professional 2006 isn•t a market leader among anti-virus software for sure. It doesn•t come cheap either: Rs 1,400 for a year. For a similar price, there are plenty of other choices available. Most free anti-virus software sport smarter interfaces.

RATINGS	
Performance	★★★½○
Features	★★★○○
Ease of use	★★★½○
Value for Money	★★★○○
Overall	★★★½○

Contact:**Karvid Technologies**
Phone:**020-27641650**
E-Mail:**sanket@karvid.com**
Web site**www.virusbuster.hu/en/**
Price:**Rs 1,400**

WINDOWS XP

Vista has already been released, but most of us still use XP„and so, we bring you yet another compilation of tweaks and tips to enhance your experience with XP. Do make a backup of your Registry before trying any tip involving Registry changes.

☐ Scheduling Connecting And Disconnecting From Your ISP

With many ISPs using PPPoE-based connections, and many ISPs having awkward schemes such as night-unlimited starting at 2 AM, it•s a good idea to schedule your dialling process rather than staying up late at night. Once connected, your downloads can start. You can also schedule to connect to VPNs.

Schedule the dialling to your ISP

First we create a batch file. Start Notepad (or any other text editor). Enter the following:

```
RASDIAL <Connection Name>
<Username> <Password>
```

<Connection Name> should be your exact connection name. Save the file using a suitable name such as •DIALNET.BATŽ.

Now create a schedule by clicking on Scheduled Tasks in the Control Panel. Double-click on Add Scheduled Task. Click Next. Browse and choose the path of the BAT file. Choose the type of frequency you want the task to run at. Next set the time and date. Finally enter the password for the account running the dialler. You can further make changes to the schedule by right-clicking on the newly-created scheduled task and clicking on Properties.

So why would you want to make changes? Well, many more settings can be applied, and multiple schedules can be allotted. Say you connect between 12 and 8 AM, and then you want it to connect at 1 PM again. Such options are available only once you•re done adding the schedule through the Wizard.

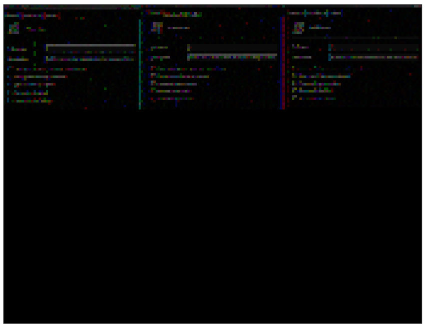
Similar to scheduling a connection, disconnection can be done in the same manner. Some alterations in the batch file creation are needed. First, create a new text file and enter

```
RASDIAL <Connection Name>
/disconnect
```

Save the file as a BAT file, for example, •DISC-NET.BATŽ. Be sure to enter your exact connection name in place of <Connection Name>. Once again, like the connection schedule, create a schedule in the same manner only this time choose the Disconnecting BAT file.

☐ Disable Expiring Of Windows Passwords

Windows XP Professional•s password expires after 42 days. You can disable expiring of Windows passwords if this is a bother. In the Control Panel, double-click on Administrative Tools, then Computer Management. Expand Local Users and Groups. Under Users, right-click on the account of your choice and click Properties. Check the box for •Password never expiresŽ.



Passwords will never expire again

☐ Enable •Pin to Start menuŽ For Folders

As it stands, it is only possible to pin programs or shortcuts to the Start Menu, but no folders. To add this, in the Registry Editor, browse to HKEY_CLASSES_ROOT\Folder\shellex\ContextMenuHandlers . Create a new key by right-clicking in the right pane and selecting New > Key. Enter •{a2a9545d-a0c2-42b4-9708-a0b2badd77c8}Ž as the key name. Now that that•s done, right-click on any folder in Windows Explorer, and you will see a •Pin to Start menuŽ option.

Now you can pin folders to the Start Menu

Change The Internet Key•s Functionality

Almost all keyboards, cheap or costly, come with special keys including an Internet key. You can choose to make that key load another application instead of the browser. (The keyboard drivers often provide this capability, but sometimes they don•t.)

To change this, in the Registry Editor, go to HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\Explorer\Appkey\7 . Create a new String Value by right-clicking in the right pane and selecting New > String Value. Enter the name as ShellExecute . Double-click on the newly-created String Value and enter the Value as the path of the file you want to run when you press the Internet Key. Click OK.

Changing key functions

Enable The Windows ZIP tool

Windows XP comes built in with a compression tool that reads ZIP files as folders. When you install Windows, you can open ZIP files using that tool. Then, say you install WinZip or WinRAR, and then uninstall it. You•ll then need to re-enable the inbuilt ZIP file reader.

To enable Windows ZIP files as a folder feature again, you can use a simple command. At a command prompt, enter regsvr32 %windir%\system32\zipfldr.dll . Press[Enter].

Adding Safe Mode To Your Boot List

At times you might need to switch to Safe Mode to fix a problem such as a virus infection or uninstalling drivers. You can add an entry to the boot list. To do this, go to Control Panel > System (or simply press [Windows] + [Pause/Break]). Click on the Advanced tab. Then, click on the Settings button under the Startup and Recovery section. Click on Edit under System Startup to indirectly edit the boot.ini file. Add the following entry: multi(0)disk(0)rdisk(0)partition(2)\WINDOWS= Microsoft Windows XP - Safe Mode /fastdetect /safeboot:minimal /sos /bootlog

You can add more entries if needed to boot any Windows installations on other disks or partitions.

Add Safe Mode to the boot options

A Prettier Volume Control

Few people know that the Volume Control has a hidden, compact-looking profile. You can create a shortcut with the command as sndvol32 /s or by pressing [Ctrl] + [S]with the Windows Volume Control running. Press [Ctrl] + [S] again to revert to the original size.

To open a minimal volume control with only the single slider, you can create a shortcut by first right-clicking at the location you want to add the shortcut, then click New > Shortcut , and type in sndvol32 /t .

A small Volume Control

Remove Default Shared Folders

Windows XP comes with a shared folder called Shared Documents which is visible when you open My Computer. You can remove the folder by removing a key in the Registry. (You might want to do this because, for example, viruses can end up there through an infected network.) Browse to HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\Explorer\MyComputer\NameSpace\DelegateFolders\ . Here, delete the key with the name {59031a47-3f72-44a7-89c5-5595fe6b30ee} . The shared folder will disappear.

Access Desktop From Taskbar

One of the easiest ways to access programs is to use Quick Launch. In the cases of My Documents or Desktop icons, it•s not possible to copy all these into the Quick Launch: instead, right-click on the taskbar, click on Toolbars, and choose Desktop. Your Desktop will appear on the taskbar. Now you no longer have to minimise all your windows to access items on the desktop.

Access the Desktop from the Taskbar

Similarly, you can also first create a folder with a suitable name with shortcuts for your favourite programs. Next, right-click on the taskbar and then on Toolbars > New Toolbar . Point to the folder containing your shortcuts and click OK.

Automatically Terminate Hung Programs

When programs lock up or stop responding, you are forced to [Ctrl] + [Alt] + [Delete]> End Process This tweak lets Windows automatically shut down hung programs. In the Registry Editor, browse to HKEY_CURRENT_USER\Control Panel\Desktop . You will find a String Value called AutoEndTasks. Double-click on it and change the value to • 1”. You can also set the timeout value by double-clicking on the WaitToKillAppTimeout String Value and changing its value to the time in milliseconds before Windows kills the task.

Disable The Windows CD Writing Function

Windows XP comes with CD writing software which can be used if you don•t have any third-party program to do that. If you do use the third-party software, you can disable the inbuilt writing feature.

Go to My Computer. Right-click on your CD or DVD writer and click Properties. There, click on the Recording tab, and uncheck the box •Enable CD/DVD Recording on this driveŽ.

Stop XP from writing your CDs

Disable Sending Of Windows Error Reports

When a program crashes, it gives you an error, then asks you to send a error report to Microsoft„which you usually abort or ignore. You can disable the popping up of the option altogether: [Windows] + [Pause/Break] click on the Advanced tab and then on the Error Reporting button. Here, you can click the Disable Error Reporting radio button, or choose the programs you want to exclude from getting the error reporting option. Click on Choose Programs to do this.

Add Additional Time Servers

Windows lets you synchronise your system clock with a server on the Internet. If you didn•t know about it, double-click on the time and click on the Internet time tab. Check

Get your PC to tell time better

•Automatically synchronize with an Internet time serverŽ to enable it. At times, the servers may be down. To add servers, in the Registry Editor, browse to HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\DateTime\Servers. Here, create new String Values with names like 3 , 4, and so on. Double-click on them to enter the Value(s), and enter the server address(es).

Windows Hard Drive Optimisation

Windows has a system idle process that optimizes your hard drive using when you•re away from the PC. In the Registry Editor, browse to HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\OptimalLayout . Add a new key by right-clicking in the right pane and clicking New > DWORD Value Name it EnableAutoLayout , and give it the value 1 .

Set Windows To Use Memory

Windows often spills data over into the page file even when there•s free memory available, which can cause a drop in performance. You can•t entirely rectify this, but you can do the following to reduce the number of accesses to the page file. In the Registry Editor, browse to HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Session Manager\Memory Management . Double-click on the DWORD DisablePagingExecutive and change its value to 1.

Unload DLLs From System Memory

After a certain amount of time, Windows starts caching DLLs into memory, which can be a waste. You can get Windows to automatically unload the DLLs. Start the Registry Editor and browse to HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\Explorer\ . Create a new key called AlwaysUnloadDLL . Change the (default) string value to 1 .

Hide And Show Accounts

Every account created on Windows XP will show up on the logon screen. If certain accounts are inactive, you can hide them from just the logon screen. In the Registry Editor, browse to HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows NT\CurrentVersion\Winlogon\SpecialAccounts\UserList . Here, for every account you want to hide, right-click in the right pane and select New > DWORD Give it the exact name of the account. Double-click on it and set a value of 1 to show it or 0 to hide it. Administrator accounts are usually hidden; you can enable the Administrator account in a similar manner.

Limit Logon Hours For Users

Parents might want to limit their children•s computer usage, so they can set a time limit only between which they will be automatically allowed to log into their Windows account. Limited usage for particular users for certain time periods can be set through commands. The command for doing this is:
net user <Username> /time:<Parameters>. For example, net user DIGIT /time:M-F,08:00-17:00 will only let the user DIGIT log in between 8 and 5 from Monday to Friday.

Remove Windows Messenger

Most people use Windows Live Messenger (MSN) instead of Windows Messenger, and the latter can often be an annoyance. You can remove Windows Messenger by typing the following command at a command prompt:

```
rundll32 setupapi,InstallHinfSection
BLC.Remove 128 %SystemRoot%\INF\
msmsgs.inf
```

Assign A Shortcut Key To Any Program

Any program can be launched using the keyboard by assigning a shortcut key to it.

Right click the program•s shortcut (the program to which you want to assign a shortcut key). In Properties, under the Shortcut tab, •Shortcut keyŽ is, by default, •noneŽ. Just click in the box and chose an alphanumeric key to be assigned as the shortcut key. Windows will assign [Ctrl] + [Alt] + [(Alphanumeric Key)] as the shortcut key.

Shortcuts to anything

Shutdown, Restart, And Logoff Icons On The Desktop

You might want to have shortcuts on the Desktop for shutdown, hibernation, etc.

Right-click on the Desktop and make a new shortcut by selecting New > Shortcut.

Then in the Type the location of the item: box, enter shutdown.exe -s -t 00 , where 00 is the delay in seconds. (You can increase it.) You will then be asked to select a name (call it •ShutdownŽ, for example).

After creating the shortcut, you can change the icon assigned to it by right-clicking on the shortcut and selecting Properties. The window that comes up next has a •Change IconŽ option, which is easy to use.

For a Restart shortcut, use shutdown.exe -r -t 00 . Replacing -r by -l gives the code for logging off: shutdown.exe -l -t 00 . Fast user switching is also possible; the code for that is Rundll32.exe User32.dll, LockWorkStation . Similarly one can also make a shortcut for Standby/Hibernation. If Hibernation is enabled, the computer will hibernate, else it will go into Standby. For this, use %windir%\system32\rundll32.exe PowrProf.dll, SetSuspendState.

Get Rid Of The Windows Update •Restart LaterŽ

To get rid of that nag screen, run the command •gpedit.mscŽ to launch the Group Policy Editor. Navigate to Local Computer Policy > Computer Configuration > Administrative Templates > Windows Components > Windows Update. Select •Re-prompt for restart with scheduled installationsŽ, right-click on it, and choose Properties. Check the enable option, and select the restart interval (in minutes) to be long enough not to bother you.

Restore The Show Desktop Icon

Did you know you can •Show DesktopŽ by using [Windows] + [D]? That apart, sometimes, the Show Desktop icon in the Quick Launch bar goes missing. The following is the manual method to re-create the Show Desktop icon. Copy the following into Notepad:

```
[Shell]
Command=2
IconFile=explorer.exe,3
[Taskbar]
Command=ToggleDesktop
```

Save this file as •Show Desktop.scfŽ, and then drag it to the Quick Launch bar. You can even use the Regsvr32 command for the same thing. At a command prompt, type in the following:

```
regsvr32 /n /i:U shell32.dll
```

The Show Desktop icon should now be visible in the Quick Launch bar.

Bazaar

We test the latest hardware and software products available in the market

Samsung BD Writer SH-B022A

Ahead Of Its Time?

FIRST LOOK
SAMSUNG

We got to review Samsung•s new Blu-ray writer, the SH-B022A. It writes the largest-capacity on discs that Digit has seen thus far„50 GB Blu-ray discs! You can back up your entire hard drive with just a handful of discs.

The drive looks like an ordinary IDE optical drive with the BD marking on the bezel being the only differentiator. Build quality is average compared to the drives we have tested thus far, but the tray mechanism seems smoother, and is quite noiseless. Going well with •Blu-rayŽ is the blue LED that glows behind the Eject button.

Blu-ray burning speed is 2x (8.78 MB/sec), a tad faster than 6x DVD (8.1 MB/sec). This doesn•t sound too good, since the much faster 16x (21.6 MB/sec) DVD writing is common today. Burning 25 GB to a 2x BD-RE (Blu-ray Disc Recordable Erasable) disc took us 47 minutes„agonisingly slow. But yes, the technology is still being improved, and given a few months, we•ll see faster Blu-ray drives.

Backward compatibility has been taken care of, with support for writing to CD as well as DVD recordable media of all kinds„except DVD-RAM. The 8 MB buffer is sufficient to preclude buffer underruns. Sequential DVD-R burning took 505 seconds, while burning to a DVD+R took more than 8 minutes, both at 12x. This is slower than today•s DVD-Writers, which get the same job done in not more than 360 seconds.

The drive comes bundled with CyberLink BD Solution, a software suite for burning as well as video editing, playback, and backup software. Sadly, the suite lags behind Nero by miles.

Ultimately, the price takes the fun out of everything: an obscenely high Rs 22,000, keeping it out of reach of most of us. Also, A 25 GB disc is about Rs 1,500, and they aren•t easily available. But then, remember that DVD-Writers were priced at $1,500 in the early 2000s!

RATINGS	
Performance	★★★○○
Features	★★★⯨○
Build Quality	★★★○○
Value for Money	★★⯨○○
Overall	★★★○○

Specifications

Reading: BD-ROM, BD-R, BD-RE: 2x; DVD+R, DVD-R, DVD-ROM: 12x; CD-R, CD-ROM: 40x. Writing: BD-R, BD-RE: 2x; DVD+R, DVD-R: 12x; DVD+R DL, DVD-R DL: 4x; DVD+RW, DVD-RW: 4x; CD-R: 32x; CD-RW: 24x. Buffer: 8 MB; interface: IDE

Contact:**Samsung India Electronics Pvt Ltd**
Phone:**011-41511234**
E-mail:**hari.pandey@samsung.com**
Web site**www.samsungindia.com**
Price:**Rs 22,000**

Transcend T.sonic 630

Feature-rich

The T.sonic 630 is trendy-looking and small enough to carry around. It is being targeted at college students on the lookout for a feature-rich music player. It is available in three flavours„1 GB in orchid, 2 GB in pod white, and 4 GB in black. The bright white four-line OLED display is clearly readable in diverse lighting conditions.

The menu is simple to navigate, but the keys have a hard tactile feel. There are six inbuilt equaliser profiles and a five-band customisable equaliser. The player supports one-touch recording, which is one-touch even when the power is off. WAV recording can be from three sources„ radio, microphone, and line-in, and the recordings are automatically stored in three different folders. Recorded files are named in month / date order. Two recording environments are provided, meeting and memo; the former is more sensitive. The voice activation detection works well only in silent surroundings, and allows for gapless recording.

Playback quality is definitely not the best in its class. The earphones have good overall response, but bass lacks depth. The FM tuner stores up to 20 stations. The player does not require proprietary software to load songs: simply drag and drop. It supports USB 2.0, but in our tests, it took five minutes to transfer 600 MB of data„very slow.

There•s bundled utility software as well: the boot-up function makes the music player USB-bootable, and the PC-lock makes the player an access key to your computer. The partitioning function allows creation of a partition with password protection. The recovery function allows you to reset the player to factory settings.

The 2 GB white model retails at Rs 4,500. Though the player lacks great playback quality, it•s good enough for the price.

RATINGS	
Performance	★★★⯨○
Features	★★★★○
Build Quality	★★★★○
Value for Money	★★★★○
Overall	★★★★○

Specifications

Size: 73 x 33 x 12.5 mm (L x W x H); weight: 30 gm; compression rate: 32 Kbps„ 320 Kbps; supported music formats: MP3, WMA, WMA DRM -10; charging and data transfer: USB mini port; 15 hrs playback when fully-charged

Contact:**Mediaman Group of Companies Pvt LTD.**
Phone:**022-23823100**
E-mail:**sales@mediamangroup.com**
Web site**www.transcendusa.com**
Price:**Rs 4,500**

Integral USB 2.0 Flash Drive

About Average

Integral•s (1 GB) USB 2.0 Flash Drive is encased in a flashy sky-blue rubber exterior. This means it•s not only rugged enough to be reasonably shock-proof, it•s also splash-proof. One problem: the rubber coating tends to attract dust.

Performance was slow compared to that of other 1 GB Flash drives. Writing 700 MB of assorted data to the drive took 5 minutes, and reading the same data from the drive took a minute. (As a comparison, the Corsair Flash Voyager 1 GB, which is similarly rugged, writes 700 MB to the drive in 34 per cent of the time we•ve mentioned, and reading takes 37 per cent of the time.) Random access time, though, was 5.2 ms, which is quite good.

The drive comes with SecretZip, a compression software that compresses data with password protection. SecretZip can only be run on Integral•s USB Flash drives.

But that•s just about as much security as the software provides: the compressed files can be easily deletedƒ If ruggedness is of prime importance, you•ll like this drive, else there are better-performing products available at better prices.

RATINGS	
Performance	★★★○○
Features	★★★★○
Build Quality	★★★★½
Value for Money	★★★○○
Overall	★★★½○

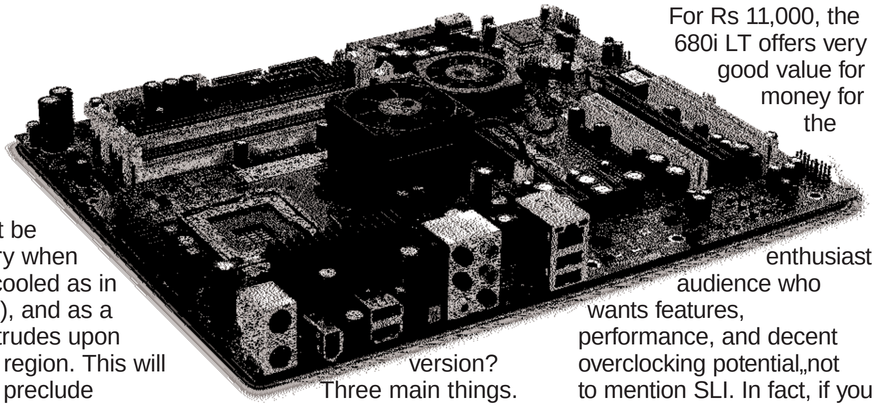
Contact:**Goldstone Imaging Pvt. Ltd**
Phone:**011-41530501**
E-mail:**integral@goldstoneltd.com**
Web site**www.integralmemory.com**
Price:**Rs 1,550**

Specifications

USB 2.0; software bundle: SecretZip

XFX nFORCE 680i LT

680i On A Diet



Let•s face itƒ Sure nFORCE 680i motherboards are blazing performers, feature-rich, and future proof (read 1333 MHz FSB support), but they aren•t exactly wallet-friendly! Neither is the nFORCE 650i a very viable option for enthusiasts. NVIDIA finally acknowledges this and coughs up a •budgetŽ variant of their top-end 680i, with the •LTŽ as a suffix.

XFXs• 680i LT uses the reference NVIDIA PCB layout, which is now designated •Designed for NVIDIA.Ž One major annoyance: the power pins are squeezed between the memory modules, the four pin auxiliary power connector, and the IDE connector. This makes accessing the pins extremely difficult, and it•s not a good idea to have wires around the memory slots either. XFX has provided cooling fans for both chipsets; however, the Northbridge heatsink is quite large (which shouldn•t be necessary when actively cooled as in this case), and as a result, intrudes upon the CPU region. This will probably preclude installation of larger coolers like Thermalright•s XP-120 and Ultra 120, or Scythe•s Ninja and Infinity coolers.

The BIOS on this board is the same as a regular 680i, minus a few SLI memory profiles, and some extra options like a PCI-Express slot (the 680i has three, while the LT version has two).

So what•s different between the 680i and its LT version? Three main things. First, there•s no third PCI-Express slot between the two SLI x16 slots. Second, there•s one Gigabit LAN instead of two, making NVIDIA•s DualNet impossible. And third, SLI profiles are only supported up to 800 MHz (the 680i goes up to 1200 MHz). What you get in exchange is a much lower price tag, taking the 680i LT well and truly into Intel•s P965 territory price-wise.

For Rs 11,000, the 680i LT offers very good value for money for the enthusiast audience who wants features, performance, and decent overclocking potential„not to mention SLI. In fact, if you don•t plan on a physics card and two 1 Gbps LAN connects, you can overlook the 680i altogether and pick a board based on the 680i LT chipset. Hardcore overclockers will still look at the 680i and Intel•s P965, while casual users will settle for lower solutions like NVIDIA•s 650i and Intel•s 965G, which are slightly lower-performing options and sans a few features.

RATINGS	
Performance	★★★★○
Features	★★★★○
Bundle	★★★½○
Value for Money	★★★½○
Overall	★★★½○

Contact:**Rashi Peripherals Pvt Ltd**
Phone:**022-67090909**
E-mail:**navinderc@rptechindia.com**
Web site**www.xfxforce.com**
Price:**Rs 12,500**

Specifications

nFORCE 680i LT chipset, Socket 775, Core 2 Duo/Quad ready, 1066/1333 FSB, DDR2 800 MHz support, six SATA 2.0 ports, eight USB 2.0 ports

SAHARA MC765124-MK10

Media Center For The Living Room

[redacted]

Finished in luxurious black with a huge brushed aluminium dial, it looks more like a DVD player than a Media Center PC.

The volume knob has a bright blue backlight and [redacted] also provides access to card readers and the other regular PC ports.

The media player has a functional IR for the remote control built in the front panel. An additional two wire lead is provided which can be set at convenient angle allowing the remote to be used in a wider range

On the media front, the PC comes bundled with a TV-Tuner card, FM radio, a DVD player, and a 160 GB hard drive. There•s onboard 7.1 audio for connecting a surround sound system; however, Sahara has only bundled an Altec Lansing 2.1 speaker set.

On the PC front, you have the Pentium D805 processor, which is good enough for media and typical PC usage. There•s 512 MB of RAM, and a 17-inch LCD. The wireless keyboard is a cute piece of hardware with an inbuilt mouse tracker; we sorely missed a separate mouse.

Performance-wise, the integrated 945G provides playable frame rates in most of games -not for serious gaming. The 16X DVD Writer dose a fine job of popping out burnt DVD•s at a decent pace. The 7200 rpm SATA hard disk is fast enough for its intended use as a Media Centre PC.

At Rs 51,999 is hard to justify: you can get a powerful system for the same price. Still, the form factor is unique, and will blend well into the décor of a nice living room.

RATINGS	
Performance	★★★○○
Features	★★★○○
Ease of Use	★★★½○
Value for Money	★★★○○
Overall	★★★○○

Specifications

Processor: Pentium D 805; motherboard: PIC PTM945G/P; 512 MB 533 MHz DDR2 RAM; 160 GB 7200 rpm SATA HDD, 16x DVD-RW; 17-inch 4:3 LCD monitor; 2.1 Altec Lansing 121i 20 W speakers; wireless keyboard with integrated tracker ball; IR remote; Hauppauge (Conexant chipset) TV-Tuner

Contact:**Sahara Computers and Electronics Limited**
Phone:**022-30303838**
E-mail: **info@saharacomputers.co.in**
Website:**www.saharacomputers.co.in**
Price:**Rs 51,999**

TOP UPS

Very Functional

In an increasingly •me-tooŽ product world, the TOP-UPS stands apart. It adheres to the •Form should follow functionŽ design philosophy perfectly.

Shaped like a small helmet, the TOP UPS has nifty features that enhance its usability. First, it has slots on top for storing CD cases. Second, there is a little flap in front with a bright white LED, which can act as a torch during power failures. Third, there is a digital clock at the front. A small socket at the front provides an alternative way of charging cell phones.

Wipro has provided six different adapter plugs used by major cell phone manufacturers such as Nokia and Sony Ericsson.

The operating range for the UPS is specified as 140 to 280V, and with a transfer time of below 10 ms the UPS kicks in during power failures. Two power outlets are driven via the battery, while other one is surge-protected and not driven off the battery. The colour coded power outlets eases installation. The maintenance-free battery is rated at 12V, 7AH is user-swappable.

On our test-bed consisting of a Pentium 4 3.06 GHz, Foxconn 945G7MA motherboard, and a 17-inch CRT, we got a backup time of 12 minutes„quite typical.

At Rs 3500, the TOP-UPS is priced higher than UPSes with similar specs. However, considering the extra features on offer, we think the price is justified, though we•d have liked to see a better (read more sober) colour scheme.

Specifications

Dimensions: 184 (W) x 235 (D) x 236 (H) mm; weight: 6 kg; 600 VA, 360 W; supports cold start ;transfer time: <10ms; input voltage: 140 ~ 280 V; output voltage: 230 V ± 5 per cent (battery); RJ11 port surge suppression; typical recharge time 6 hrs to 90 per cent capacity

RATINGS	
Performance	★★★½○
Features	★★★★○
Build Quality	★★★★○
Value for Money	★★★★○
Overall	★★★★○

Contact:**WeP Peripherals Ltd**
Phone:**1800-4256446**
E-mail:**top.ups@wepindia.com**
Website:**www.wepindia.com**
Price:**Rs 3,500**

HP PHOTOSMART D7368

A photographer s companion

The HP Photosmart series is targeted at photographers who demand a high-quality photo printer. The Photosmart D7368 looks tidy; the design is elegant. Build quality is good, with sturdy, neatly-laid out trays. A transparent shutter gracefully covers the memory card slots, allowing for easy access and preventing dust build-up.

The printer took about 6 minutes to print an A4 size photo at best quality. The colour prints were some of the best we•ve seen with an inkjet printer! Finer aspects were reproduced in detail, and throughout the test procedure, the prints had a neutral tone. In addition, colour contrast ratio is notably good, allowing for more vivid colour reproduction. Textures were reproduced in detail, and even metallic shine was rendered with the proper lustre on photo paper. In draft mode, black was reproduced as a dark shade of grey, but this was rectified when we switched to normal print quality.

The low-resolution touch-screen is easy use, but still requires the use of some discrete keys to navigate certain menus. All of the printer•s functionality can be easily accessed via the touch-screen. Basic help for procedures such as loading cartridges, paper loading, and paper jam is provided as animations. The memory card slot allows taking prints directly from memory card. Prints can even be taken from a PictBridge-compatible digicam via USB.

The software bundle makes printing as well as basic editing a simple process even for novices. Notable is Photosmart Premier: it is a slightly advanced image-enhancement application, and allows for taking customised prints in varying sizes.

Photographers and even photo enthusiasts who click a lot, and require a neutral toned, high-quality printer, should certainly consider this printer a good buy to suit their needs.

RATINGS	
Performance	★★★★○
Features	★★★★○
Ease of Use	★★★★○
Value for Money	★★★○○
Overall	★★★★○

Specifications

4800 x 1200 dpi; 3.4-inch touch-screen; internal memory 64 MB; dimensions (W x D x H): 462.5 x 387.3 x 172.9 mm, weight: 8 kg; tray capacity: 100 sheets

Contact:**Hewlett-Packard India Pvt. LTD**
Phone:**1800 42 54 999**
E-mail:**vibhor.bansal@hp.com**
Website**www.hp.com**
Price:**Rs 10.999**

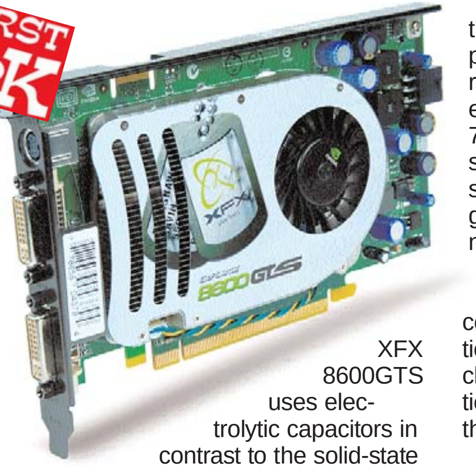
XFX 8600GTS and 8600GT

Mrs Green just got twins!

NVIDIA•s G84 comes to life as we present 2 cores based on it a.k.a the 8600GTS and the 8600GT.

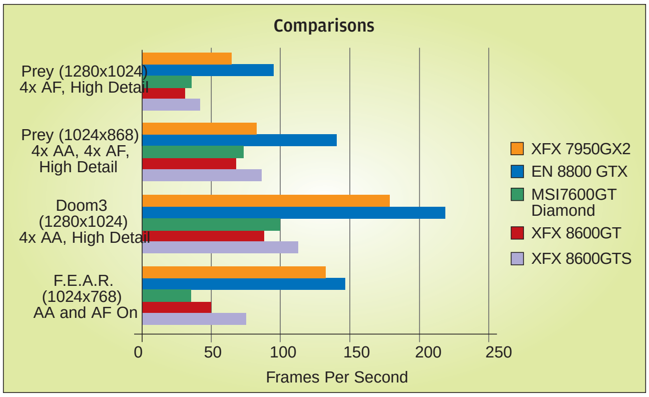
One can immediately tell these are minnows compared to the colossal 8800GTX. Both cards are based around a 32-shader unit core, fed by 256 MB of GDDR3 memory. The difference is only in clock speeds, both core and memory.

From its look, the 8600GTS is the higher-end card, with a larger heatsink. Heating doesn't seem to be an issue with either card, at least from preliminary tests. Unfortunately, the XFX 8600GTS uses electrolytic capacitors in contrast to the solid-state ones on the 8600GT. Why such a backward step? Did XFX expect users to buy the 8600GT and overclock beyond GTS speeds?



As features go, these cards are identical, expect the GT version doesn't support HDCP. Pitched as mid-range cards, these are expected to replace the 7600GT and GS Direct X 10 support. Driver support is spot-on with current-gen games, we played 10 games - no issues.

Priced as they are (below) the 8600GTS is costly for a mid-range solution, and considering that clocks aside they•re identical. The 8600GT really hits the sweet spot in this regard.



RATINGS	
Performance	★★★★○
Features	★★★★○
Bundle	★★½○○
Value for Money	★★★○○
Overall	★★★★○

Specifications

8600GTS/GT - 32 shader units; core speed 675/540 MHz; memory speed 2000/1400 MHz; shader unit clock - 1450/1180; 289 million transistors; 256 MB GDDR3 memory (128-bit)

Contact:**Rashi Peripherals**
Phone:**022-67090909**
Web site**navinderc@rptechindia.com**
Price:**Rs 16,000 (8600GTS)**
Rs 10,000 (8600GT)

Dragon Naturally Speaking [redacted]

Close-To-Perfect Voice Recognition!

Speaking to your computer might seem silly, but it might just be the most sensible thing to do with Dragon Naturally Speaking 9. Let•s take a quick look at how effective it really is.

We installed the software on our test bed: an Intel Pentium 4 HT, 1 GB of RAM, and a Creative Audigy2 sound card.

Training is, of course, required, and it involves a good amount of patience on your part„it can take days. Any mumbling or drop of quality in your speaking style can mess it up.

We used the software for over a week to gauge performance. The detection is close to perfect, but occasional error corrections are needed. Small words confused it even during the training ses-

sions. The nu
voice recognit
however, was
fast and accur
The applica
consumed arou
200 MB of RA
some 50 to 60
cent CPU utilis
Very long sente
can cause slow
and inaccuracy
Moving on
tures, the softw
the ability to let
voice command
almost all Wind
tions. There are five modes for various types of dictation, such as numerical entry, text entry, and voice commands.

Making random selections can be done by saying •SelectŽ followed by the words. This is helpful in fixing mistakes in the text. You can add custom words to the database if the soft-

conversion isn•t impressive, and sounds like the Microsoft Speech Engine.

RATINGS	
Performance	★★★★☆
Features	★★★★☆
Ease of use	★★★★½
Value for Money	★★★☆☆
Overall	★★★★☆

Good help is provided by both the printed booklet and also the good number of voice tutorials, which explain many features in detail. The bundle includes a small headset which is OK, but very uncomfortable for long sittings because of its small size.

Vista support was recently added in the 9.5 update of the software.

Overall, the voice recognition is effective once you•ve gone through the training. We think it could have been lighter on the system, and that a better headset could be supplied. Overall, highly recommended for people who are slow at typing or hate typing a lot.

Contact:**M/S ICONS**
Phone:**022-26351063/022-26324801**
E-Mail:**mrg@icons.net.in**
Web site**www.nuance.com**
Price:**Rs 11,542**

Symantec Backup Exec System Recovery„Desktop Edition

Wish Backup Worries Away!

Symantec has released an excellent product to automate all your system backup and restoring tasks„a product that might well kill Windows• System Restore!

The main feature is, it lets you create a backup of your entire hard drive, or a partition, to an image. The inbuilt scheduler automates the backup process. You can schedule a backup for any date and time.

The software also lets you create new backups and only store the last, set number of updates.

Backed-up disk images can be restored onto a disk or partition. You can use the Recover Files or Folders task, where only selected folders and files will be extracted to a specified destination. Mounting of the disk images as a partition without actually restoring the image to a location is also possible.

The software CD can be used as a recovery disk. Network services are enabled as the CD boots.

A lot more can be done through the recovery disk„everything from altering partitions to scanning your machine for viruses using an external virus definition database.

Installation is so simple, it can be done by a five-year-old. And if you•re expecting a complicated interface, you•ll be relieved to see that it•s anything but.

Still, an advanced mode is in place for those who want more control. A sidebar contains the task list as well as help topics.

RATINGS	
Performance	★★★☆☆
Features	★★★☆☆
Ease of use	★★★★☆
Value for Money	★★★☆☆
Overall	★★★½☆

The electronic manual and the printed documentation are the same; overall, the help is comprehensive and easy to understand.

Simply set the software to back up data every day when you log off, or whenever new software is installed on your PC„and never worry about losing data any more!

In sum, Symantec Backup Exec System Recovery is Norton Ghost with a few added features and a non-complicated interface.

Regular home users will like it, though the price tag of $69 (Rs 3,100) is a bit on the higher side.

Contact:**Ingram Micro India (P) Ltd**
Phone:**080-26564445**
E-Mail:**Deenu.m@ingrammicro.co.in**
Web site**www.symantec.com**
Price:**Rs. $69 (Rs 3,100)**

Price
Rs 125

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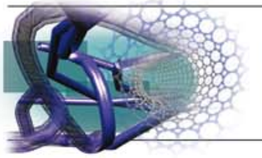

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